







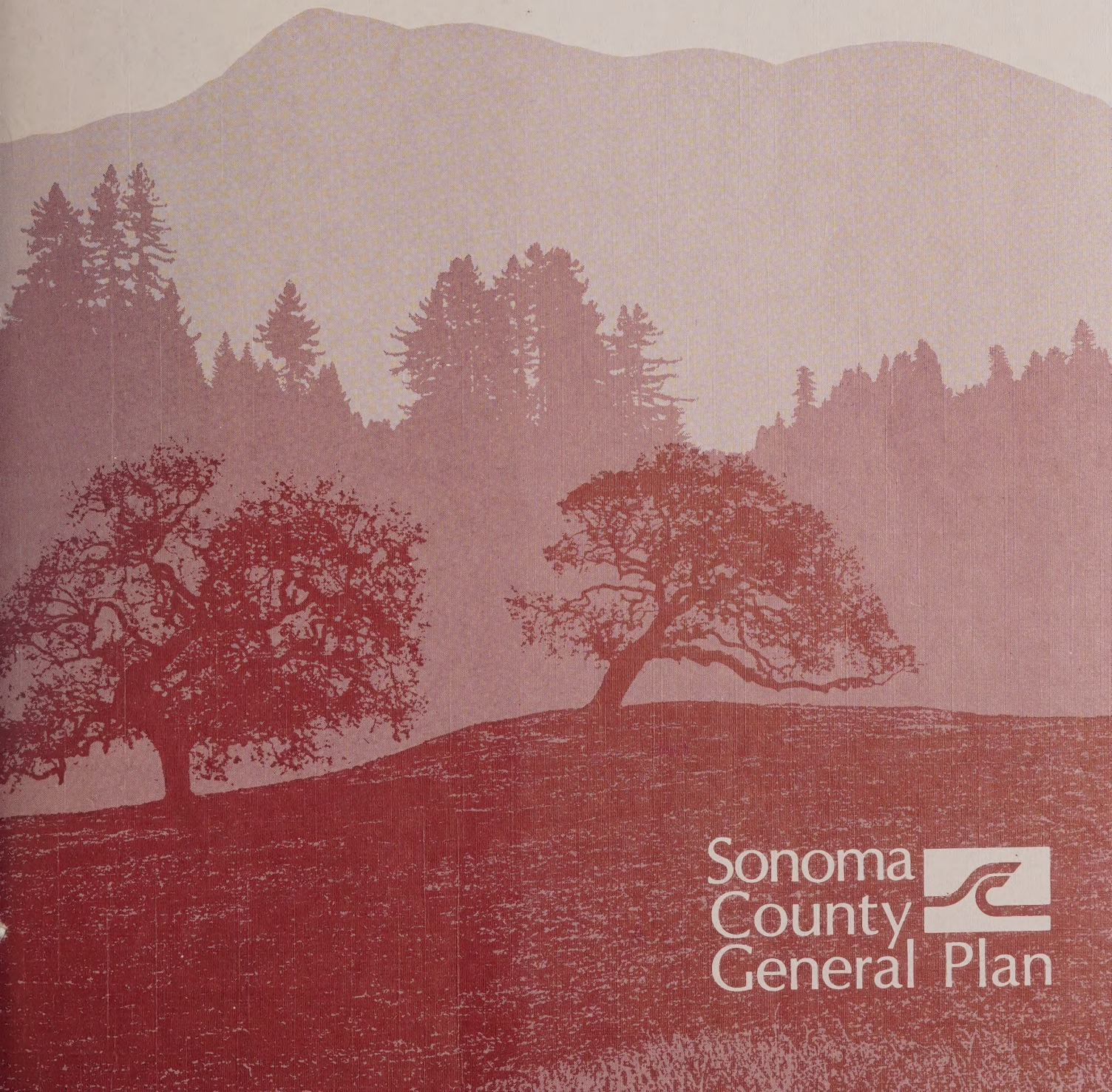
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AGRICULTURAL RESOURCES ELEMENT

PUBLIC HEARING DRAFT



Sonoma
County
General Plan



PUBLIC HEARING DRAFT

Sonoma County General Plan

AGRICULTURAL RESOURCES ELEMENT

**Prepared for Public Hearings by the
Sonoma County Planning Commission**

December 4, 1986

**Sonoma County Planning Department
575 Administration Drive
Santa Rosa, California 95401**

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1.0 INTRODUCTION

1.1 AUTHORITY AND PURPOSE

Section 65302 of the Government Code establishes seven elements mandated to comprise a general plan: land-use, open space, conservation, circulation, housing, safety and noise. Agriculture, in accordance with state law, must be addressed as a managed resource in the Open Space Element and as a user of land resources in the Land-use Element. To acknowledge the importance of agricultural production in and to Sonoma County, the Sonoma County Board of Supervisors directed the inclusion of an Agricultural Resources Element as an optional element of the Sonoma County General Plan. The policies in the Agricultural Resources Element have the same legal status as those in a mandatory element.

The Agricultural Resources Element defines agriculture as an industry which produces and processes food, fiber, and plant materials.

"...people tend to overlook the fact that agriculture is an industry. It is an industry which, not unlike steel production or auto manufacturing, involves a degree of physical danger, makes some noise and creates a certain amount of air pollution. It is an industry that cannot provide plant security by locking the factory gates. And above all, it is an industry that requires a lot of wide, open space for production." (Department of Agriculture, Farming in the Shadow of Suburbia: A Case Study in Agricultural Land Use Conflict, undated.)

The purpose of the Agricultural Resources Element is to establish policies to insure the stability and productivity of the County's agricultural lands and industries. The element is intended to provide clear guidelines for decisions by agencies of the County of Sonoma pertaining to discretionary development permits in agricultural areas and to express policies, programs and measures that promote and protect the current and future needs of the agricultural industry. If future technology of the agriculture industry requires alternative and yet unforeseen policies and implementation mechanisms, those should be consistent with the County's commitment to encouraging the maintenance of a healthy agriculture sector in the county's economy.

1.2 RELATIONSHIP TO OTHER ELEMENTS

Government Code Section 65302 et. seq. requires that the general plan be an internally consistent statement of local government policy. Each element of the general plan must be integrated with all other elements, whether mandatory or optional. General policy direction for land-use decisions in agricultural areas is expressed in the land-use element -- both in the provisions of

the agricultural use classifications and in the statements of policy for each planning region, where the diversity of conditions in the county's agricultural areas can be recognized. Policies expressed in the Agricultural Resources Element are intended to apply solely to lands designated within the three agricultural land-use categories. Policies relating to the basic physical factors of agricultural production -- soil, topography water, and climate -- are also addressed in the Resource Conservation Element. State law (Government Code Subsection 65560(b)(2)) includes agricultural lands and range lands within the definition of open space lands used for managed production of resources. The Open Space Element complements the policies of the three agriculture land-use categories and those of this element to protect the resource base. Aspects of specific issues such as farm worker housing or noise as an agricultural nuisance are also discussed in the Housing and Noise Elements.

1.3 SCOPE AND ORGANIZATION

The Agricultural Resources Element is organized into three major sections: Section 2.0 relates the basic resources of soil, water and climate to the diverse crops that can and are being produced in Sonoma County. Section 3.0 provides a policy framework for ten major issues that address the maintenance of the agricultural sector of the County's economy. Within Section 3.0, each policy issue is briefly characterized and the direction for its resolution defined. Goals and objectives establish results to be achieved; policy provides direction for actions to accomplish those objectives. The last major section expresses programs and other measures which are intended to implement agricultural policy.

2.0 SONOMA COUNTY'S AGRICULTURAL RESOURCES

2.1 PHYSICAL RESOURCE BASE

Perhaps the most prominent characteristic of Sonoma County's physical resource base is its diversity. Policy decisions affecting the agricultural industries of Sonoma County need to take into account the relationships among the soil, topography, climate, and water resources which lead to a diversity of agricultural production activities, and in turn to a diversity of methods of farming, concerns by particular farmers, and goals for land use. While diversity creates both problems and options, in the long term it may create stability for the Sonoma County's agricultural economy and for individual farmers and ranchers by offering a wide variety of crops to farm.

2.1.1 Soils

Four factors are used to measure the quality of soil for agricultural use: depth, drainage, water holding capacity and texture. Agricultural soils in Sonoma County vary widely in quality, ranging from the greatest productivity for the widest variety of crops to the most marginal productivity for a single crop. The County has extensive acreage in soils not traditionally classed as "high value" for farming, but which are in production as range or forest,

providing a valuable renewable resource. Figures AR-1a through AR-1i show areas having soils with prime production value, significant production value and grazing value. Existing urbanized areas are also shown on each map to relate the location of productive agricultural lands to urban pressures.

Two aspects of soil conservation are fundamental to continued farming in Sonoma County: 1) prime soils, and soils suitable for agricultural production must continue to be available for agricultural use; and 2) the soils used for agriculture must be managed to maintain their productivity. The first point recognizes that often the best soils for farming are also the most suitable soils for urban or rural development. If farming is to remain an important sector of the County's economy, lands most suitable for agriculture must be retained in parcel sizes sufficiently large to make them suitable for agricultural production; those lands must also be protected from impacts of incompatible residential or commercial/industrial uses. The second point recognizes that the effect of erosion can reduce the on-site productivity of land, as well as accelerate stormwater run-off which carries sediment, fertilizer nutrients and pesticides into bodies of water or other areas where they may have harmful effects. Effective, successful agricultural operations manage soils to maintain and enhance productivity. Professional assistance from agencies such as the Agricultural Commissioner, Farm Advisor, Soil Conservation Service and Santa Rosa Junior College Agricultural Department provide valuable support for the farmer in maintaining soil resources.

2.1.2 Topography

Diversity of topography further modifies the capability of soils. The low-lying coastal beaches, the Petaluma and Sonoma marshes, the rolling hills of Petaluma and the Sonoma Mountains, the Alexander, Dry Creek and Sonoma Valleys all provide for unique farming opportunities and a variety of local crops: wine grapes, apples and other fruit, vegetables, berries, flowers and native grasses each have a unique place.

2.1.3 Climate

Sonoma County's climate, largely influenced by proximity to the Pacific Ocean and topography, is as diverse as its soils. Southern Sonoma County -- West Petaluma, Valley Ford, Two Rock -- and the Coast have cool summers. The coastal area tends to have less temperature variation, as the ocean prevents extreme heat and cold. This climate is desirable for livestock production, since calves, cows, sheep, and chickens can be negatively affected by the 30-40 degree temperature swings typical of other parts of the county. This region is also well-suited to grasslands, as the coastal coolness and fog preserve soil moisture and result in a longer growing season. The Golden Gate and low, rolling hills of Petaluma and Marin permit the intrusion of cool coastal air to temper the heat of the interior valleys. The low, wide coastal mountain range influences the county's central plain, which is not as cool as the Petaluma area nor as hot as the northern Alexander Valley near Cloverdale.

Warm days and cool nights are the unique climatic attributes that provide a setting for production of premium wine grapes in the Sonoma Valley and the Alexander and Dry Creek Valleys. This climate is conducive to the production of grapes and other crops which require warmth but not extreme heat.

2.1.4 Water

The northern areas of Sonoma County with their higher temperatures and lower humidity have a high rate of evapo-transpiration (E.T.). Highest E.T. rates are associated with the highest water need -- water comprising the fourth component of the physical resource base for agriculture. The availability of water for irrigation influences the crops that can be grown and the cost of growing them. The hottest parts of the county have higher production costs associated with irrigation. Thus the production of summer grains, grasses, and row crops which are shallow-rooted are uncommon in the north county, while vines and fruit trees, which are deep-rooted and need little or no irrigation, are suited to this area.

There are two water resources: surface runoff and subsurface streams or aquifers. While surface water is obviously rainfall sensitive, some water-bearing strata are deep and somewhat drought-insensitive and other strata are highly rainfall-sensitive. In all strata, water is a finite resource and overdraft, either from agriculture or domestic use, is a concern. Particularly in the dry northeast (Cloverdale) and northwest (Coast and Gualala Basin) regions of the county, policy decisions regarding amount and type of development must reflect water limitations.

2.2 SECTORS OF THE AGRICULTURAL ECONOMY

From a varied physical resource base comes a major strength of Sonoma County's agricultural industry -- the diversity of its commodities and products. In 1980 eight products contributed 86 percent of the County's total gross agricultural value. The same eight products accounted for 82 percent in 1970. In order of value, the eight products are milk, grapes, cattle, eggs, apples, hay, chickens, and prunes. An analysis of the 1982 U.S. Census of Agriculture showed Sonoma County ranking 7th among the nation's 3,137 counties in the production of grapes; 16th in apples, plums, and prunes; and 46th in the value of dairy products sold. The county has also seen a substantial increase in small-scale farming, on a part-time or full-time basis, generally producing vegetables and/or flowers often on relatively small (under 10 acres) parcels. While data from the office of the Agricultural Commissioner for the past 20 years (1965-1985) show important shifts in crops produced and a slight decline in the amount of acreage devoted to agricultural production, it also substantiates the fact that new agricultural industries and methods have come to the County and are providing a significant positive impact on the total County economy. In 1982 58 percent of Sonoma County's land area of 1,010,560 acres was occupied by 3,075 farms. Since 1978 the County had experienced a 13 percent increase in number of farms and a two percent increase in total farm

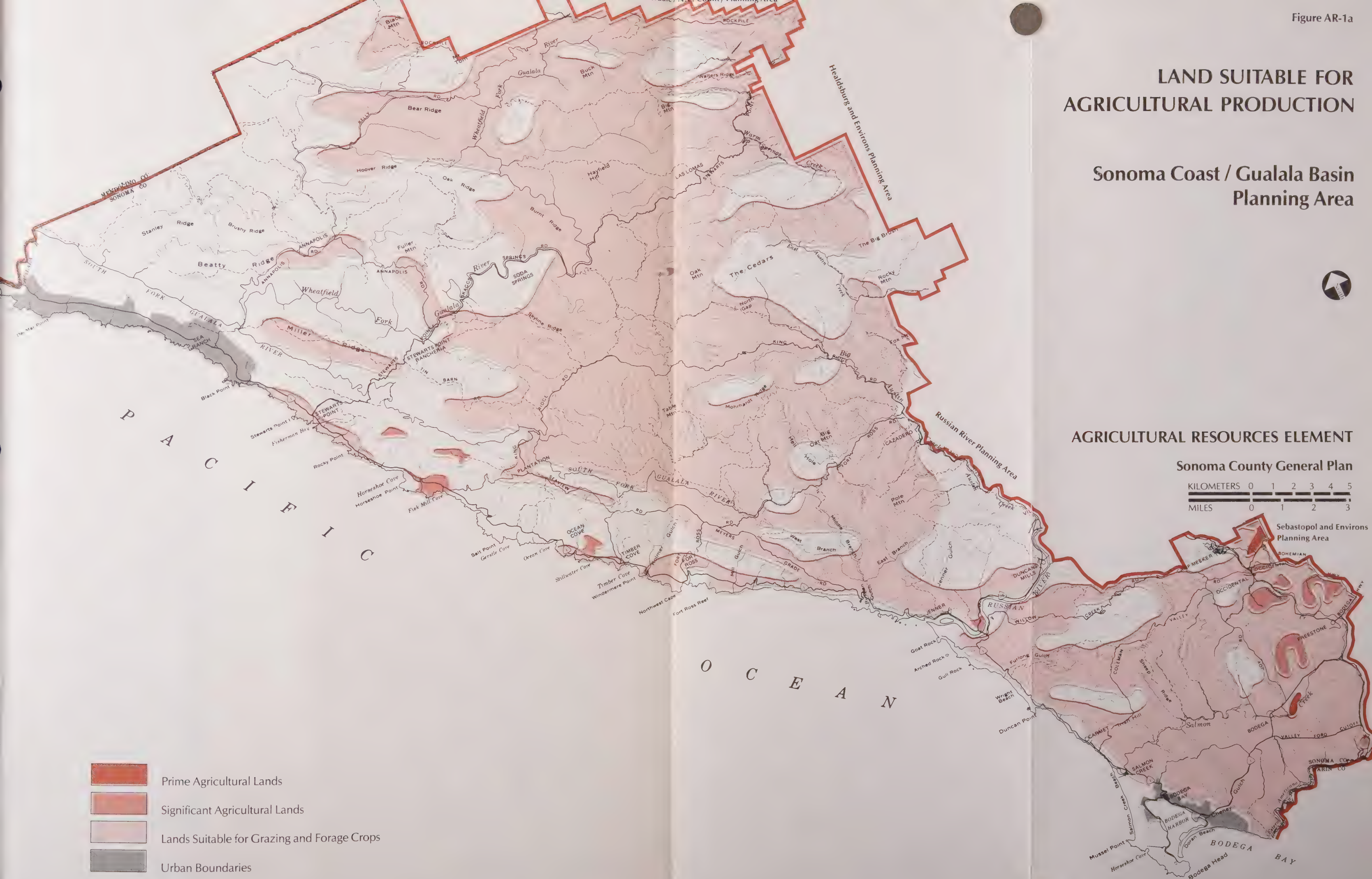
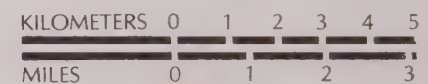
LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Sonoma Coast / Gualala Basin Planning Area



AGRICULTURAL RESOURCES ELEMENT

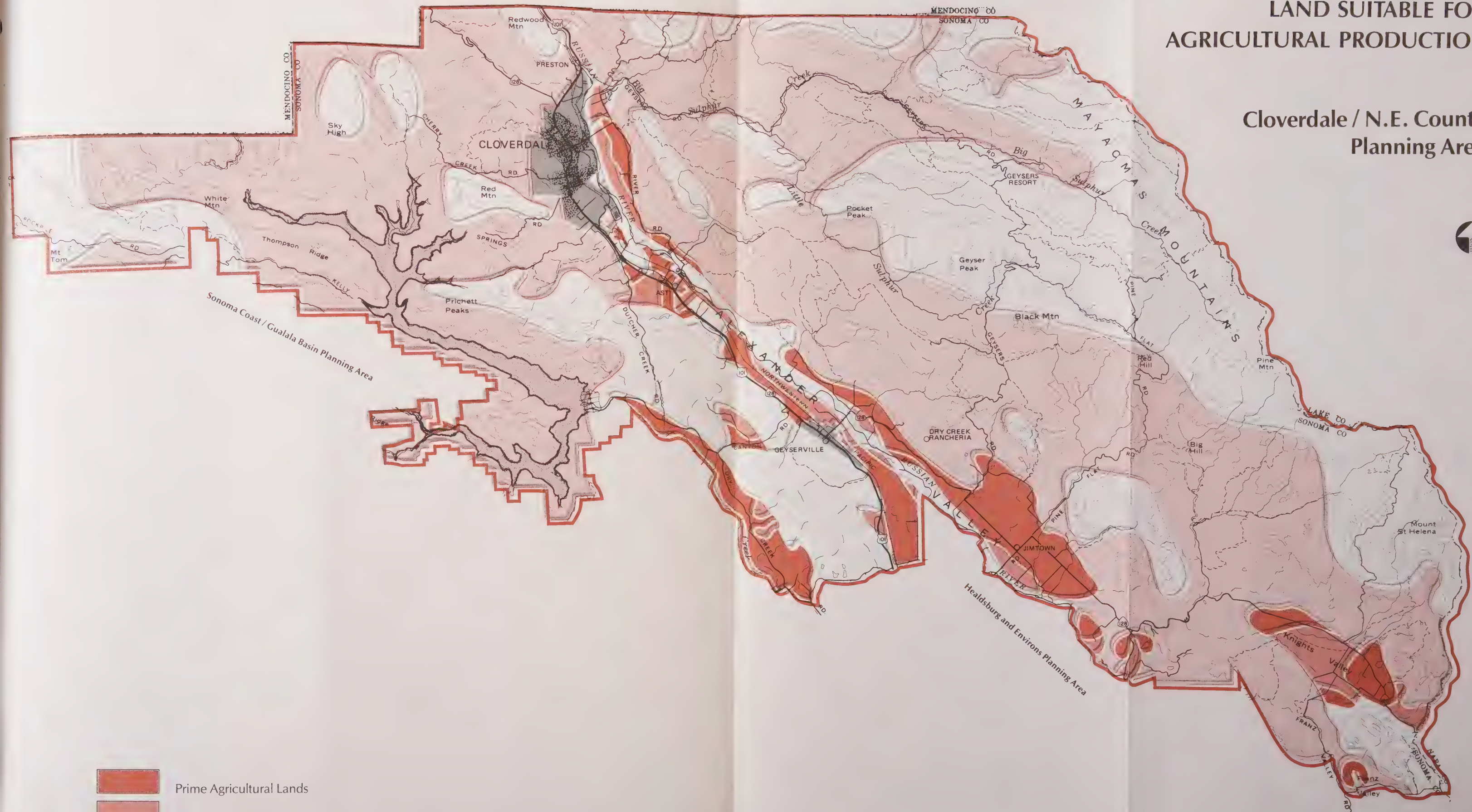
Sonoma County General Plan



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

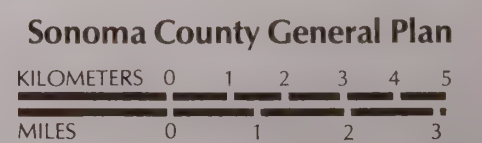
LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Cloverdale / N.E. County Planning Area



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

AGRICULTURAL RESOURCES ELEMENT



LAND SUITABLE FOR
AGRICULTURAL PRODUCTION

Healdsburg and Environs
Planning Area



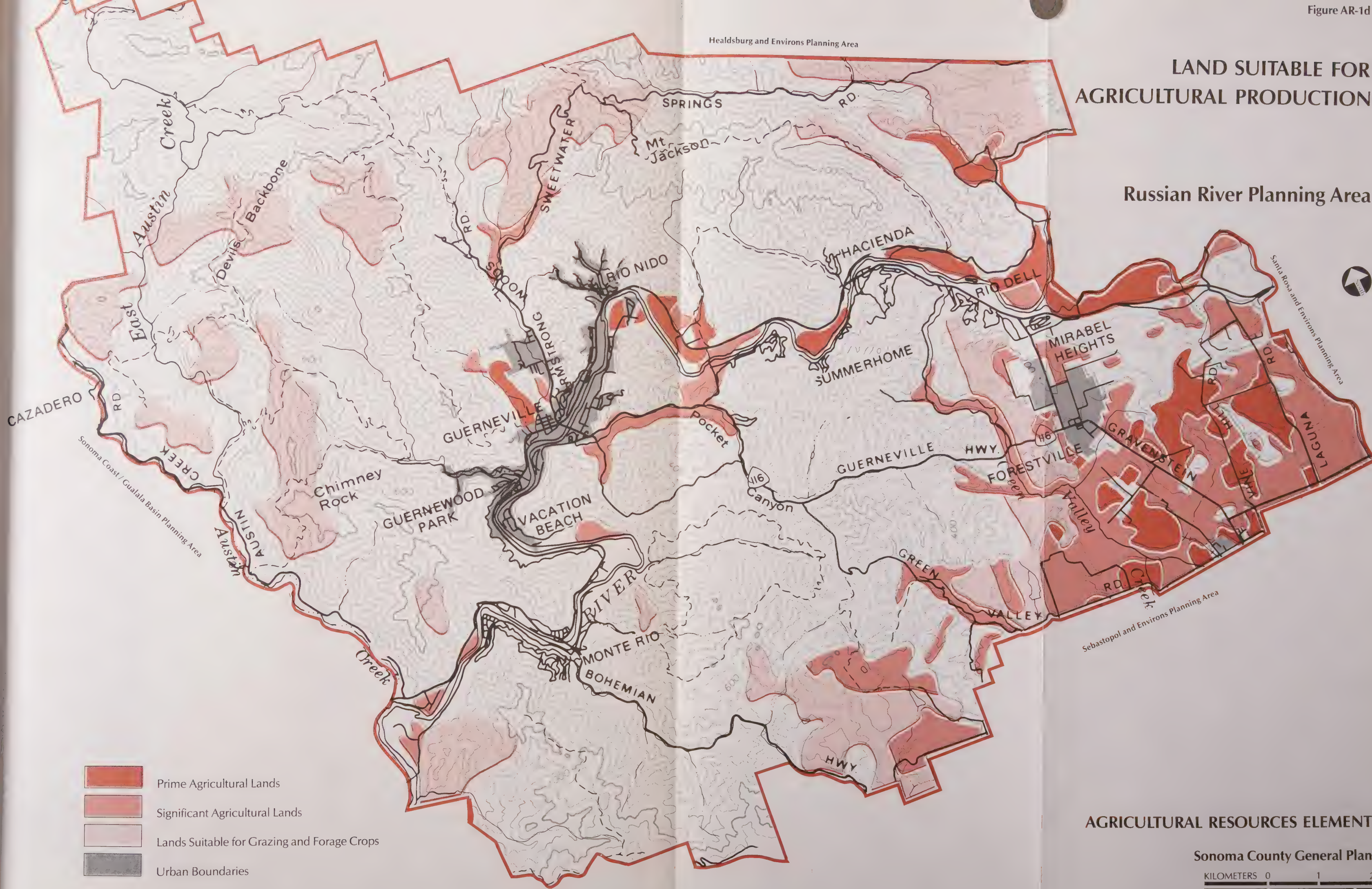
AGRICULTURAL RESOURCES ELEMENT

Sonoma County General Plan

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MILES 0 1 2

LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Russian River Planning Area

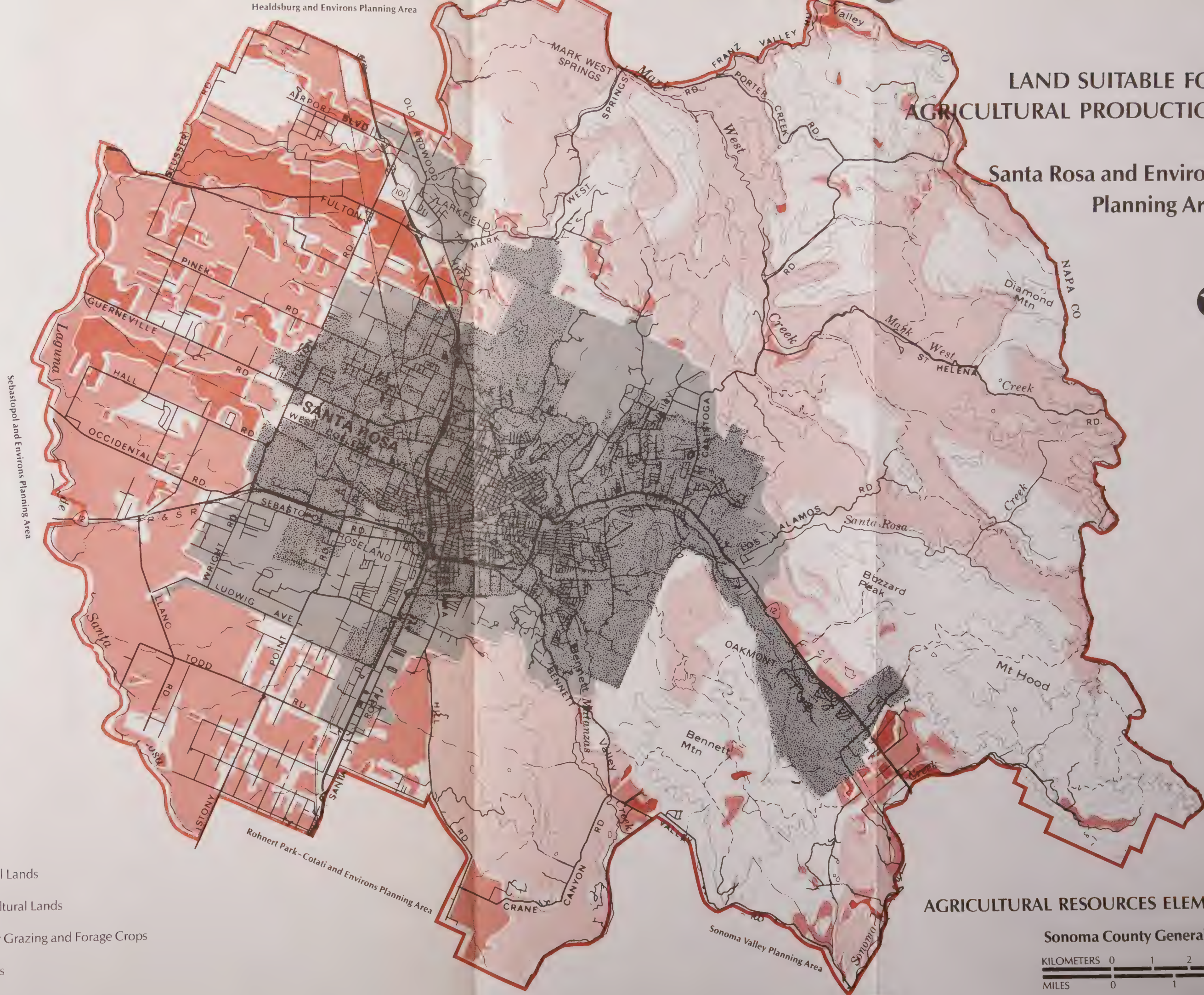


AGRICULTURAL RESOURCES ELEMENT

Sonoma County General Plan

LAND SUITABLE FOR AGRICULTURAL PRODUCTION

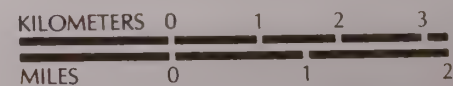
Santa Rosa and Environs Planning Area



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

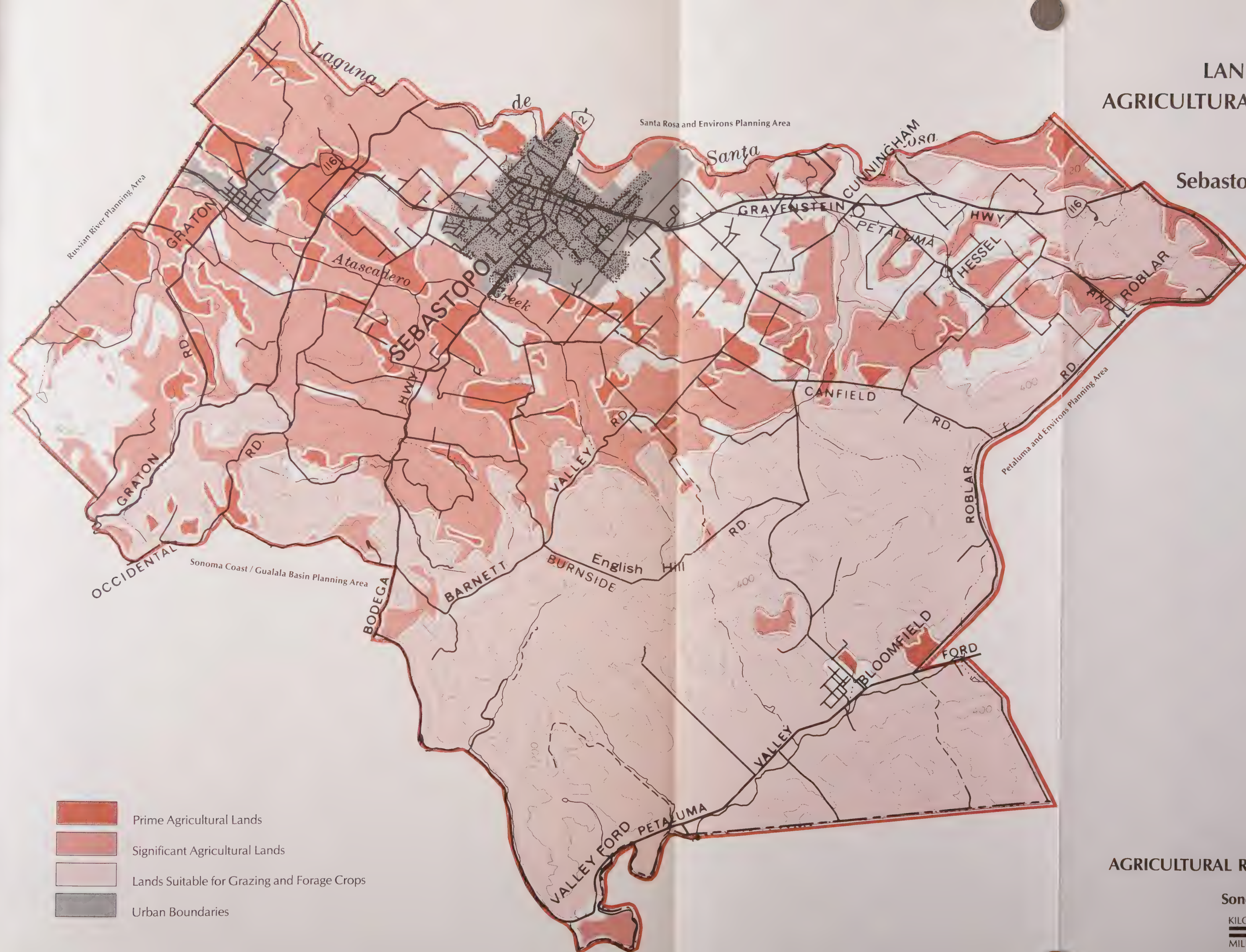
AGRICULTURAL RESOURCES ELEMENT

Sonoma County General Plan



LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Sebastopol and Environs Planning Area



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

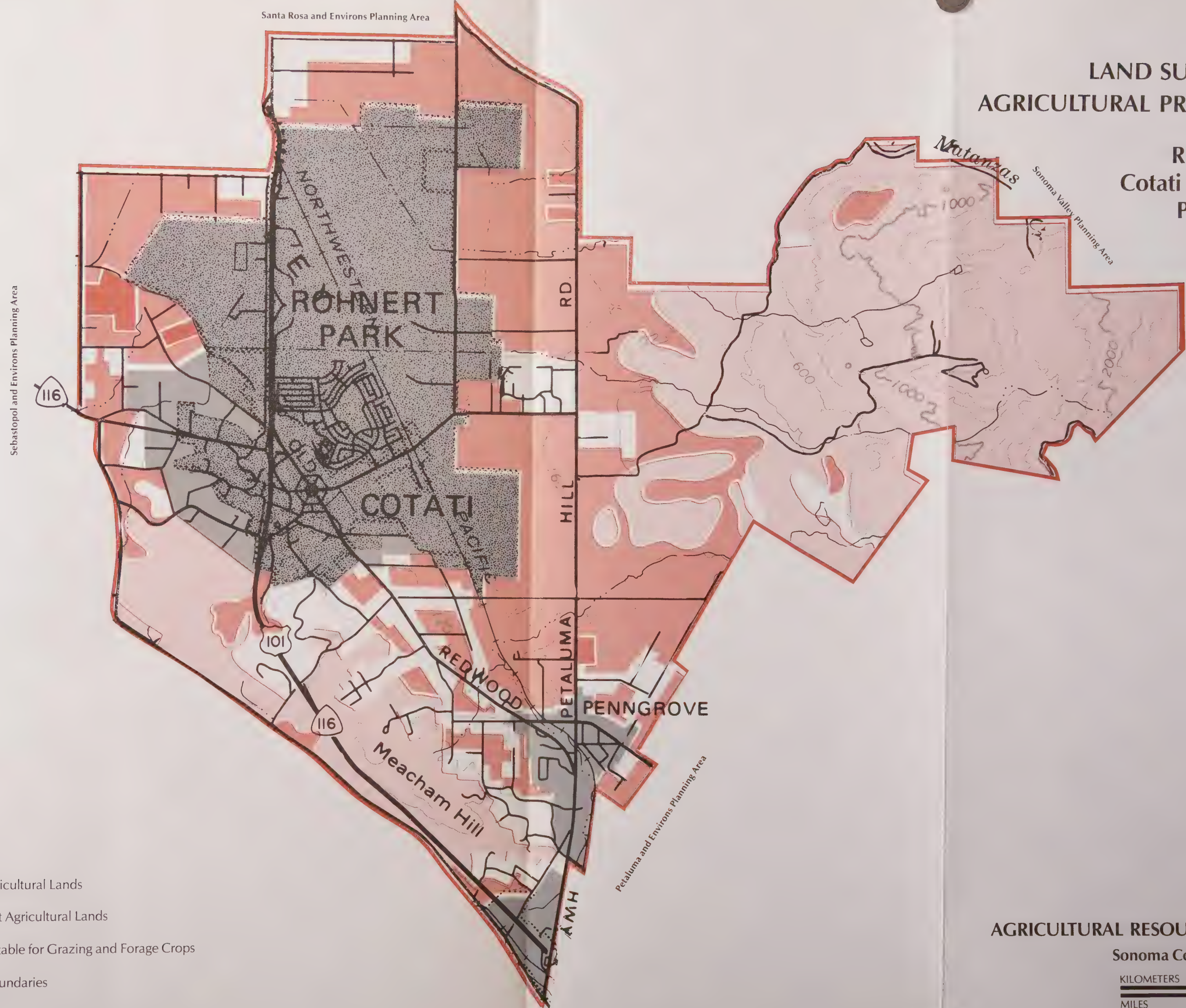
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Sonoma County General Plan

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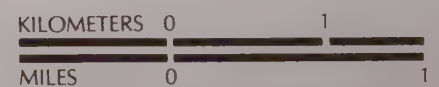
LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Rohnert Park-Cotati and Environs Planning Area



AGRICULTURAL RESOURCES ELEMENT

Sonoma County General Plan



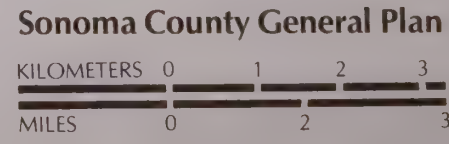
LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Petaluma and Environs Planning Area



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

AGRICULTURAL RESOURCES ELEMENT



LAND SUITABLE FOR AGRICULTURAL PRODUCTION

Sonoma Valley Planning Area



- Prime Agricultural Lands
- Significant Agricultural Lands
- Lands Suitable for Grazing and Forage Crops
- Urban Boundaries

AGRICULTURAL RESOURCES ELEMENT

Sonoma County General Plan
KILOMETERS 0 1 2 3
MILES 0 1

acreage, although the amount of land actually devoted to agriculture had decreased one percent. Significantly, average gross sales per acre had increased 17 percent (Sonoma County Economic Development Board, Mini File, 1984).

In 1984 the Agricultural Commissioner estimated that the gross revenue of all agricultural products exceeded 216 million dollars. Economists generally concur that the gross value is multiplied through the local economy by a factor of two to three times. At the same time agriculture is not a growth-inducing industry and requires substantially fewer county services than other industries; thus agriculture contributes a net fiscal surplus to the county.

For analytical purposes, the agriculture industry in Sonoma County has been divided into six sectors: Grapes and wine; milk and dairy products; orchard crops; livestock, feed crops and pasture; nursery products and vegetables; and poultry and poultry products. Figures AR-2a and 2b indicate the values of these commodity groups from 1965 through 1984 in both current and constant (1967) dollars. Figure AR-3 shows the general locations of production for the six commodity groups.

2.2.1 Grapes and Wine

Sonoma County is one of California's finest premium wine-producing areas. Along with Napa, the Sonoma region produces grapes drawing among the highest prices per ton in California, reflective of the premium quality. Sonoma County wines have been awarded more gold and silver medals than any other region nationwide. The winegrape producing areas of the County have been designated as various appellations by the Bureau of Alcohol, Tobacco and Firearms of the U.S. Department of the Treasury. These sub-county appellations are illustrated in Figure AR-4.

Analysis of the climate/topography/soil/water relationship in Sonoma County indicates that substantial portions of the county's land area is capable of producing premium grapes, and in fact the majority of the central and eastern planning areas are already doing so. Between 1967 and 1984 acreage planted to vineyard increased 224 percent and many vineyards were replanted to premium varieties. During the same period, the value of grape production in constant 1967 dollars increased 500 percent. In 1967 the value of grapes produced in Sonoma County was \$3,794,000; this value increased steadily to reach \$59,370,000 by 1984. In constant 1967 dollars the value of the grape production has increased from \$3,794,000 in 1967 to \$18,962,000 in 1984.

2.2.2 Milk and Dairy Products

Since 1967, dairy product value has increased 137 percent in current dollars, almost doubling between 1967 and 1976 and again between 1978 and 1982. Comparatively, since 1967 the number of dairy operators has decreased and the number of cows in production has decreased, but productivity has increased and the cost of production has remained fairly constant. The dairy industry now

serves 30-50 percent of the Bay Area market. Marketing is an important new focus for the dairy industry. Today's trend in the industry is to expand and diversify products. Cheese, yogurt and a calcium supplement, Vital 15, now compete with milk itself for marketing attention, and the industry has plans to market more choices of milk, and several new non-milk products.

2.2.3 Orchard Crops

Orchard crops produced in Sonoma County include pears, prunes, walnuts and miscellaneous fruits and nuts as well as apples, and are located extensively in the Sebastopol area and variously from Forestville to Healdsburg and in the Alexander and Dry Creek Valleys.

Since 1967 the industry has experienced a steady decline in bearing acreage, and since 1974 a 46 percent decline in product value expressed in constant dollars. In 1984 only 10,557 acres were still planted to bearing orchards, compared to a 1967 bearing acreage of 28,427, although some of this acreage has been converted to vineyard. In current dollars the orchard crops produced had a value of \$8,459,000 in 1967 and \$12,270,000 in 1984. In constant dollars, those values were \$8,459,000 in 1967 and \$3,919,000 in 1984.

New processing firms with new directions as well as decreased value of the dollar abroad brought new marketing opportunities to the apple industry in 1986. Vacu-Dry, which has taken over the Co-op Cannery, is promoting the apple as a natural sweetener which can be combined with other fruits to produce new products: apple/peach or berry juices and jams are now being seen on the market; dried apples are also being used to sweeten fruit products in place of sugar for the diet and health food markets.

2.2.4 Livestock, Feed Crops and Pasture

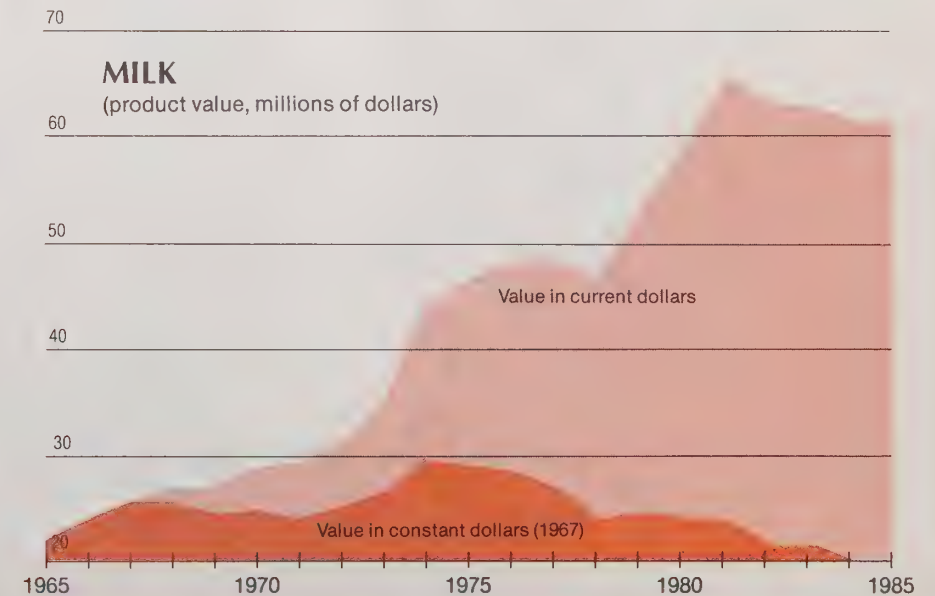
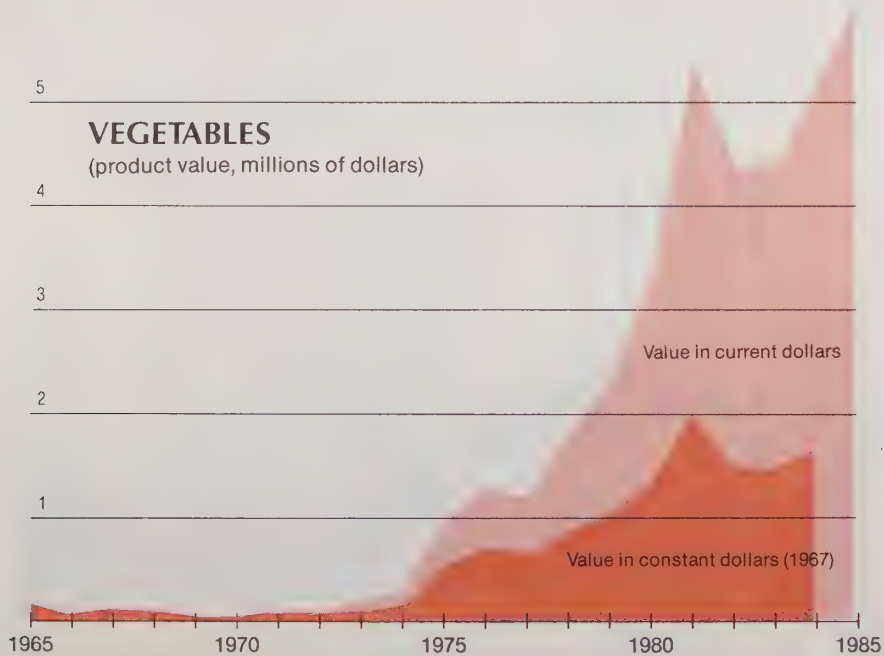
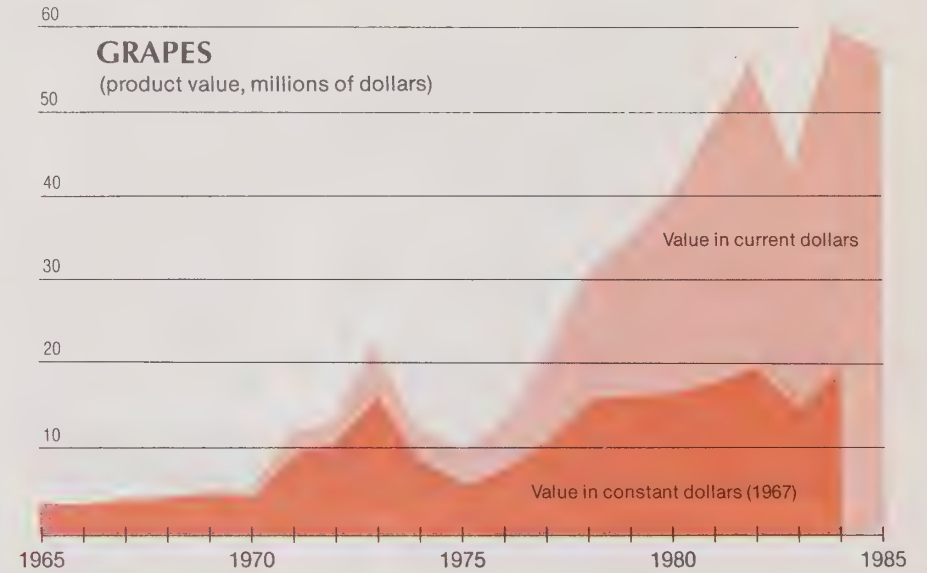
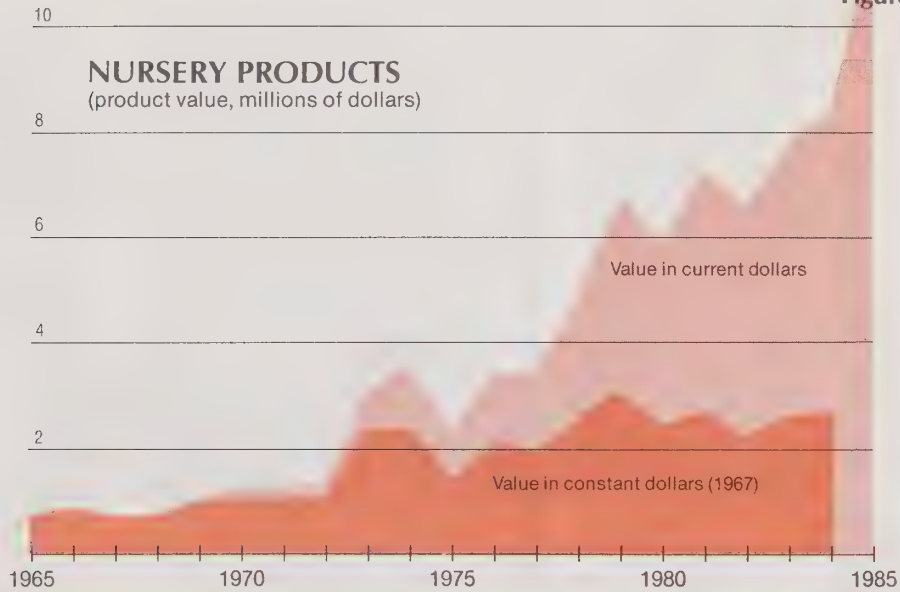
For purposes of analyzing economic trends, this is an all-encompassing sector which includes cattle and calves, veal, sheep, hogs, and wool; hay, green chop; oats; ensilage; miscellaneous feed crops; irrigated grassland, woodland and sudan pasture. Values for pasture reflect dollar value of commercial feed crops which do not need to be purchased because of the pasture resource. This is the dominant agricultural use along the Coast and in the southern Sonoma Mountains/Lakeville Highway/Highway 37/San Pablo Bay portions of the Petaluma and Sonoma Valley planning regions. While acreages in pasture and harvested feed crops have decreased approximately 15 percent, acreage now planted to silage has increased 1000%, making local silage now competitive with the San Joaquin Valley in serving local needs.

2.2.5 Nursery Products and Vegetables

This increasingly significant sector which includes acreage planted to ornamentals, bedding plants, Christmas trees, cut flowers and vegetables, has

VALUE OF SONOMA COUNTY FARM PRODUCTS 1965-1984

Figure AR-2a



experienced a dramatic eleven-fold increase in constant dollar value since 1967. (\$143,000 in 1967; \$1,658,000 in 1984.) This sector is significant to Sonoma County agriculture because 1) it can occur on relatively small parcels (5-10 acres in size), 2) it entails few of the agricultural "nuisances" associated with dairying or vineyard or orchard production, and 3) capital expenditures necessary for start-up are relatively low. The sector attracts both full-time and part-time farmers. Growth in this sector is the result of two factors: the increased interest in fresh high quality fruits and vegetables and the increased direct availability of such produce to the consumer as a result of farm markets and specialty markets in the Bay Area.

2.2.6 Poultry and Poultry Products

Poultry and poultry product value has experienced decline in Sonoma County. In 1967 the industry, historically located in the Petaluma area, produced commodities valued at \$22,035,000. In 1984, the product value had fallen to \$13,480,000 in constant 1967 dollars. The components of this sector include all chickens, chicks, turkeys and other fowl (pheasant, quail, duck, turkey poults); chicken eggs; market duck eggs, turkey hatching eggs and chicken hatching eggs.

2.3 COMPONENTS OF THE AGRICULTURAL INDUSTRY

The agricultural industry includes both production and processing components, and involves a variety of related services. The Census of Agriculture, one of the few sources of information for data related to farm operations and farm operators, has altered its definitions over the years, making long term comparisons of loss or gain of numbers of farms or acreage difficult to evaluate. However, since 1978 the definition of a farm has been..."all land on which agricultural operations were conducted and from which \$1000 or more of agricultural products were, or potentially could be sold during the census year." It is this definition from which the information contained in this section has been derived. Tabulations are from the 1982 Census of Agriculture.

2.3.1 Farm Operators and Operations

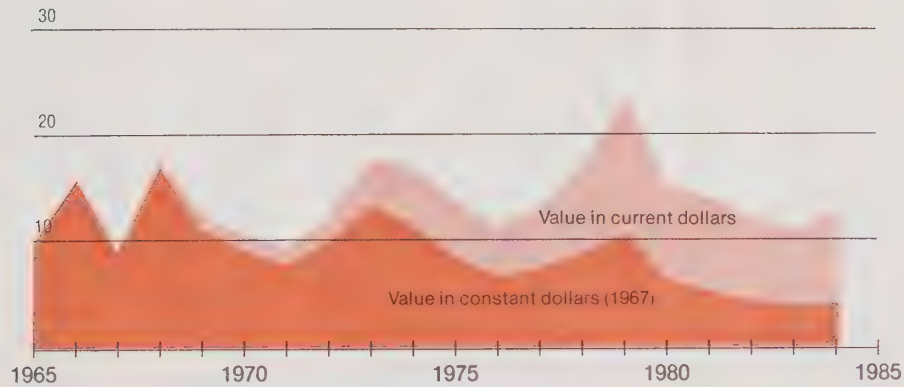
In 1982, Sonoma County had 3,075 farms encompassing 586,619 acres with an average farm size of 191 acres. There were 489 more farms in 1982 than in 1978, but only 13,022 additional farm acres. Average farm size decreased by 31 acres and numbers of very small farms had increased. In 1982, there were 350 more farms in the 1-9 acre range and 116 more in the 10 to 49 acre range than in 1978. Although the breakdown in acreages showed more farms in every size category, the numbers of new farms of more than 50 acres were far less dramatic, averaging 15 per size-category.

VALUE OF SONOMA COUNTY FARM PRODUCTS 1965-1984

Figure AR-2b

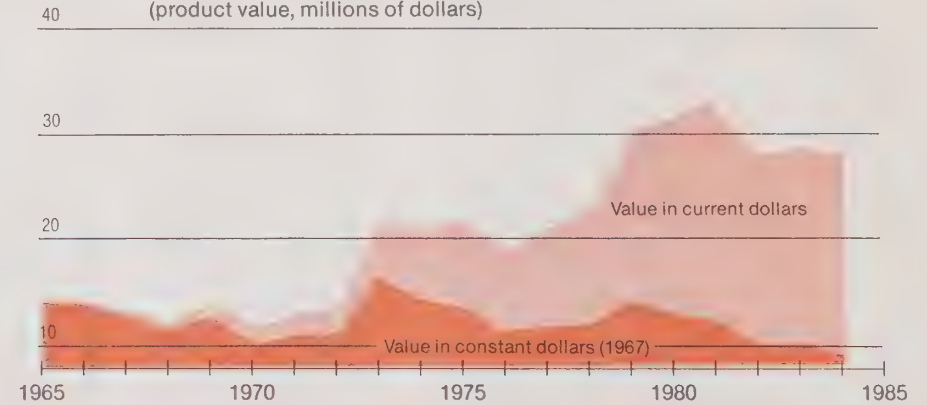
ORCHARDS

(product value, millions of dollars)



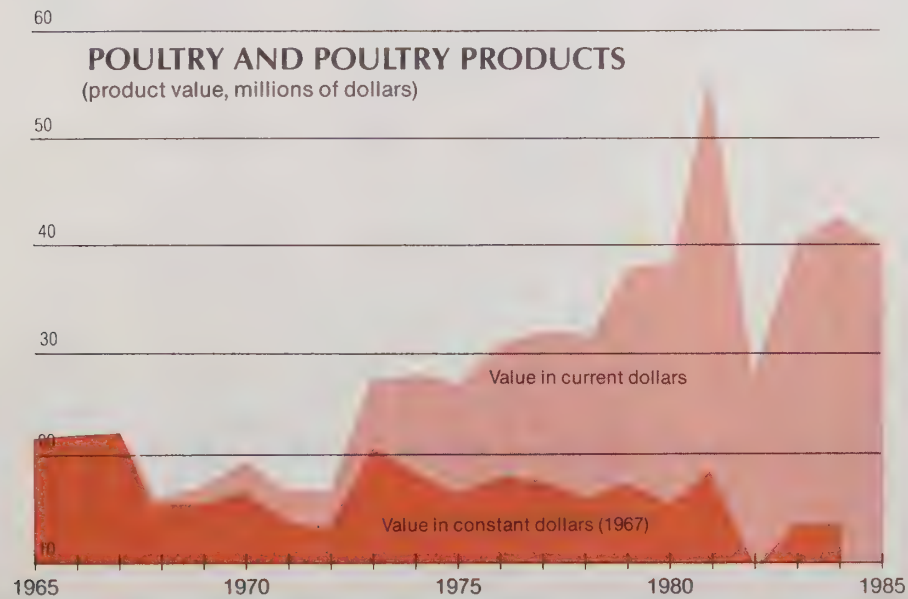
LIVESTOCK AND FIELD CROPS (INCLUDING PASTURE)

(product value, millions of dollars)



POULTRY AND POULTRY PRODUCTS

(product value, millions of dollars)



Eighty-two percent of all farms in the county in 1982 (2,548) were owned by families or individuals. Three hundred sixty four (364) were in partnership, and 139 were held by corporations. Of the 139 in corporations, 107 were family corporations.

Of the farm operators, 2,308 were full owners, 439 were part owners, and 328 were tenants. One thousand three hundred thirty two (1,332) operators considered their principal occupation to be farming, and 1,041 of those resided on the farm; 1,743 operators consider their principal occupation to be other than farming; however, 1,227 of this group also resided on the farm. The average age of Sonoma County farmers was 52.3 years, slightly younger than the 1974 Census figure of 55.5 years. There was a loss since 1978 of numbers of farmers in the under 25 and 25 to 34 age categories and a gain of farmers in the 35-44 group. Three hundred eighty-five farm operators were women in 1982, 154 more than in 1978.

2.3.2 Processing of Agricultural Commodities

Many of the county's agricultural products require processing prior to marketing: meat products (including poultry); milk; some fruits especially apples and grapes. These processing facilities usually serve as the primary market, as little potential exists in these industries for direct marketing. While the grape industry has many processors with facilities varying in size, other commodities have only a single processor. Land-use decisions must consider appropriate provisions for processing in order to support the commitment to ongoing agricultural production.

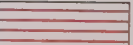




2.3.3 Marketing of Agricultural Products

In 1982 the market value of agricultural products sold by Sonoma County farms having sales of \$10,000 or more was \$181,162,000, an increase of \$52,107,000 since 1978. Fresh fruits, vegetables, and flowers are usually sold to a wholesaler who in turn sells to retailers. Apples, pears, nuts, flowers, ornamentals and bedding plants account for the majority of this type distribution. Wholesale marketing places little demand on the County for services but can provide needed service to the grower and generate public and private revenues.

Direct marketing in Sonoma County includes sales to retail grocers and restaurants, sale directly to consumer in farm markets, and at individual stands for the sale of products grown on the premises. On-site sales have been further supported by public policy through the advertising of Farm Trails, a county-wide designation of producers who will sell to the local and tourist public. The California trend toward direct marketing of local products has a strong foothold in Sonoma County; strong public policy support for direct marketing is important to the future of the county's agricultural industries.

LOCATION OF MAJOR AGRICULTURAL PRODUCTION AREAS BY COMMODITY

AGRICULTURAL RESOURCES ELEMENT

- Livestock 
- Dairy 
- Orchards 
- Vineyards 
- Vegetables 

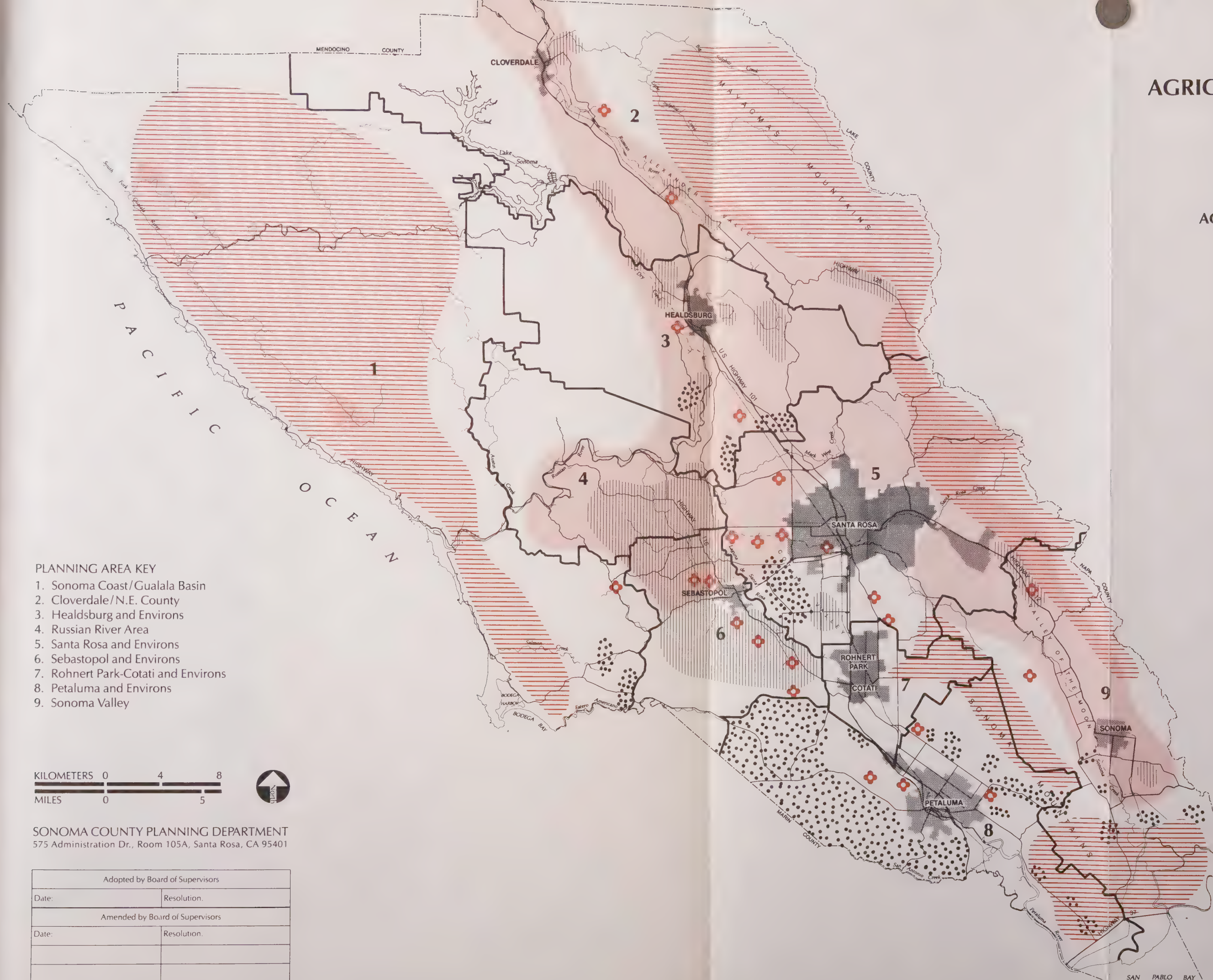
PLANNING AREA KEY

1. Sonoma Coast/Gualala Basin
2. Cloverdale/N.E. County
3. Healdsburg and Environs
4. Russian River Area
5. Santa Rosa and Environs
6. Sebastopol and Environs
7. Rohnert Park-Cotati and Environs
8. Petaluma and Environs
9. Sonoma Valley



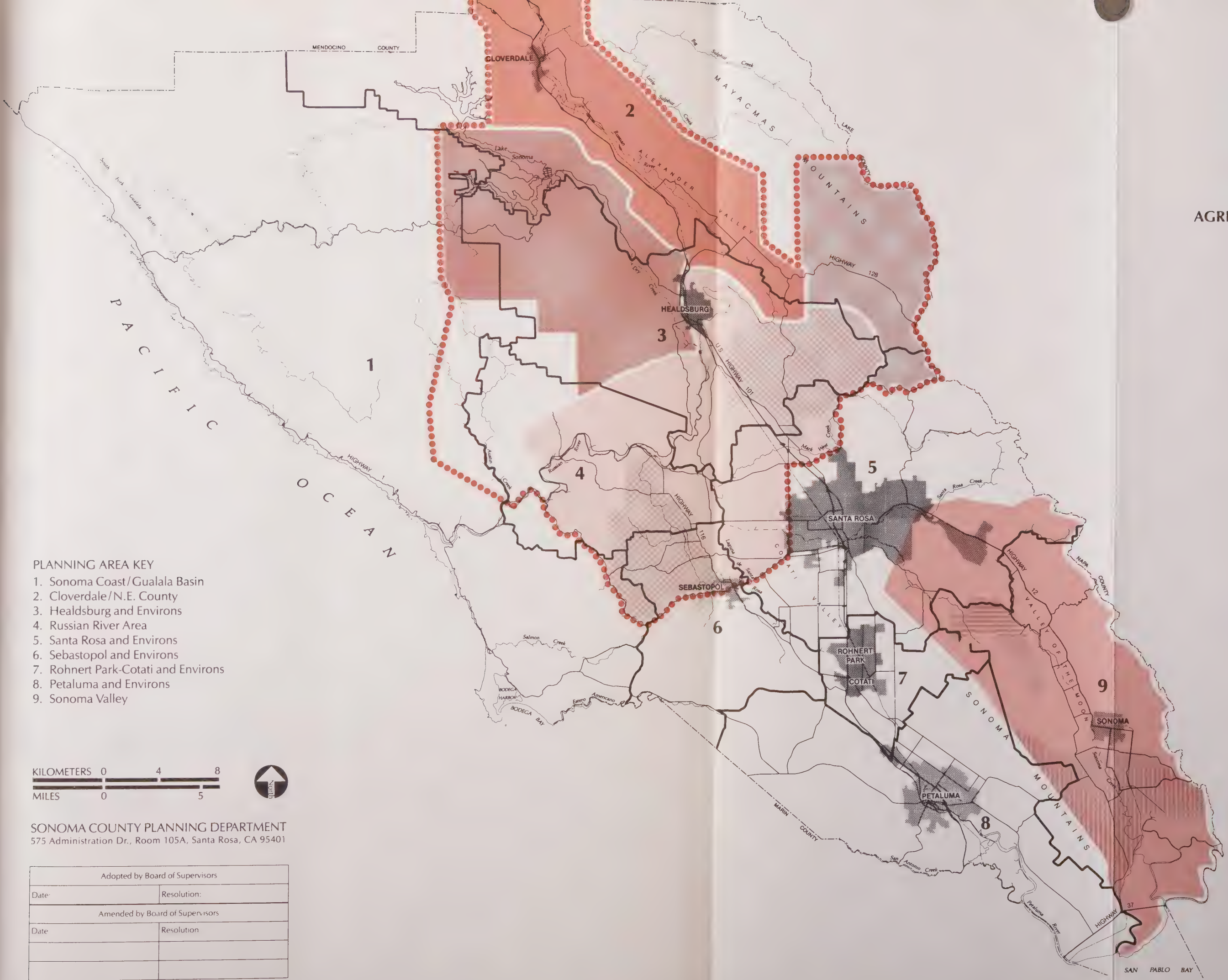
SONOMA COUNTY PLANNING DEPARTMENT
575 Administration Dr., Room 105A, Santa Rosa, CA 95401

Adopted by Board of Supervisors	
Date:	Resolution:
Amended by Board of Supervisors	
Date:	Resolution:



SONOMA COUNTY VITICULTURAL AREAS

AGRICULTURAL RESOURCES ELEMENT



- PLANNING AREA KEY**
- 1. Sonoma Coast/Gualala Basin
 - 2. Cloverdale/N.E. County
 - 3. Healdsburg and Environs
 - 4. Russian River Area
 - 5. Santa Rosa and Environs
 - 6. Sebastopol and Environs
 - 7. Rohnert Park-Cotati and Environs
 - 8. Petaluma and Environs
 - 9. Sonoma Valley



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575 Administration Dr., Room 105A, Santa Rosa, CA 95401

Adopted by Board of Supervisors	
Date:	Resolution:
Amended by Board of Supervisors	
Date:	Resolution:

- VITICULTURAL AREAS**
- Northern Sonoma
 - Dry Creek
 - Alexander Valley
 - Knights Valley
 - Russian River
 - Green Valley
 - Chalk Hill
 - Sonoma Valley
 - Sonoma Mountain
 - Carneros/Sonoma

2.3.4 Agricultural Support Services

Associated with agricultural production is demand for a variety of supplies and services, including processors and distributing, maintenance and repair of machinery and equipment, professional services, manufacturing services, and waste handling and disposal services. Institutional lenders play an important role in farm economics. The availability of credit, of technical advisory services and of agricultural services can affect the decision of farmers to remain in agriculture. Services are generally considered urban types of uses and are expected to locate in urban areas; nonetheless, certain services may be appropriately located in the agricultural production areas. Large animal veterinary hospitals, dead and diseased animal disposal facilities, some large processing facilities, and waste handling and disposal facilities require some measure of isolation to avoid conflict with the public. Many services are essential for agricultural producers and in turn require a critical mass of agricultural activity to economically sustain their existence.

3.0 GOALS AND POLICIES RELATED TO AGRICULTURE IN SONOMA COUNTY

3.1 POLICY TO ASSIST IN THE MARKETING AND PROMOTION OF SONOMA COUNTY'S AGRICULTURAL PRODUCTS

Issues: Issues include determination of an appropriate role for the County in promoting and marketing privately produced agricultural products. Successful promotion and marketing of agricultural products grown in Sonoma County can both enhance the County's image and reduce economic pressure on farmers and ranchers to subdivide or convert the land to alternative, potentially more remunerative, uses. Issues pertaining to the County's involvement in agricultural product marketing range from whether the County should have any involvement at all in promotion and/or marketing to questions about the nature and extent of the county's financial commitment and use of regulatory mechanisms.

Directive: The Agricultural Resources Element shall establish policies and which will assist in promoting and marketing agricultural products grown or processed in Sonoma County.

Goal AR-1: It is a goal of the County of Sonoma to promote a healthy and competitive agricultural industry whose products are recognized as being produced in Sonoma County and have the widest possible distribution.

Objective AR-1.1: It is the County's objective that opportunities to promote and market agricultural products grown within its borders be created and facilitated as part of economic development activities of local government agencies.

Objective AR-1.2: It is the County's objective that marketing of products grown and/or processed in Sonoma County be permitted in all land areas designated for agricultural use.

The County shall utilize the following policies in achieving these objectives:

AR-1a: It is county policy to permit a wide variety of promotional and marketing activities of county-grown and processed products in all agricultural zoning districts.

AR-1b: The Economic Development Board shall include as one of its functions promotion of agriculture as a major county industry.

AR-1c: The County shall consider the promotion of its agricultural products a high priority in the disbursement of available funds, including the distribution of the County advertising budget.

3.2 POLICY TO STABILIZE AGRICULTURAL USE AT THE URBAN FRINGE

Issues: Between 1949 and 1985 the City of Santa Rosa annexed 19,328 acres, much of which is flat, highly productive soils; in 1962 Rohnert Park incorporated, removing 3,750 acres of prime soils which prior to World War II produced a notable proportion of the world's seed crop. Rapid urban growth produces speculative pressures on agricultural lands that (1) tend to discourage new agricultural investment, which results in a decrease of acreage farmed; and (2) raise the price of land, making purchase for farming unrealistic, and in turn increasing the likelihood of purchase for non-agricultural use. Issues relating to the competition between urban and agricultural uses at the urban boundary include whether it is desirable for County policy to attempt to counteract inflationary pressures at the urban fringe; whether it is possible to have a long-term impact; what the appropriate means are to affect the land market; and how interjurisdictional competition might be reduced.

Directive: In order to insure the stability that enables a farmer to invest and reinvest in the agricultural production on his land, the Agricultural Resources Element, in conjunction with the other elements, shall establish policies to: maintain urban limit lines and provide incentives for continued agricultural use of farmlands located just beyond the urban boundary.

Goal AR-2: It is a goal of Sonoma County that agricultural production be maintained throughout the time horizon of this plan on farmlands at the peripheries but beyond the expansion boundaries of cities and unincorporated urban service areas, in a context where the influence of speculative land transactions on the price of farmland is minimized and incentives are provided for long-term agricultural use.

Objective AR-2.1: It is the County's objective to limit intrusion of urban development into agricultural areas.

Objective AR-2.2: It is the County's objective to maintain the urban service boundaries established on the land-use plan maps so as to protect agricultural lands at the urban fringe for continued agricultural production.

Objective AR-2.3: It is the County's objective to limit extension of urban services such as sewer and water lines beyond the urban service boundaries established on the land-use plan maps.

The County shall utilize the following policies to achieve these objectives:

AR-2a: Agricultural land-use categories shall be applied to lands based on their capability to produce food, fiber and plant material and urban services shall not be extended to these lands.

AR-2b: Amendment of the urban boundaries into agricultural areas, or extension of urban services beyond said boundaries as shown on the land use maps, is inconsistent with the policies of the Land-use and Agricultural Resource Elements. The planning department shall prepare a written report to LAFCo regarding the consistency with the general plan of any proposed changes in the sphere of influence boundaries for governmental entities which provide water and/or sewer services.

AR-2c: Input from the agricultural community shall be sought by the County for any future re-evaluation of land areas needed for urban development and/or any consideration by LAFCo of requests to alter established urban service boundaries adjacent to or proximate to agricultural lands.

AR-2d: If a purchase or transfer of development rights program is established and appropriate funding and mechanisms are available to acquire interests in agricultural lands, properties at the urban fringe shall be designated priority parcels for such voluntary programs.

AR-2e: The County shall encourage the LAFCo to to make specific findings, before approving annexations or changing designated spheres of influence, that the probable development would not be at the expense of agricultural land, or that the community's need for the kind of development in the location proposed is paramount.

3.3 POLICY TO LIMIT INTRUSION OF NEW RESIDENTIAL USES INTO AGRICULTURAL AREAS

Issues: Since the first half of this century, orchards in Sonoma County have decreased by 31,000 acres. While about 8,000 acres have been converted to wine grapes, a substantial proportion of the remaining 23,000 acres have gone to homes. In the 1970's pressure for rural homesites and "ranchettes" resulted in creation of a five-acre loting pattern in much of the Sebastopol and Environs region, severely affecting continued apple ranching both because of conflicts between agricultural practices and residential users and because of speculative pressure similar to that adjacent to urban areas. Elsewhere in the county, zoning has permitted numbers of small residential parcels to be clustered together surrounded by large agricultural areas. This type of development not only withdraws some land from production, but also exposes a large perimeter area to conflicts, and threatens interior areas because all traffic related to urban development must cross the agricultural areas. The issues surrounding conversion of agricultural lands to rural homesites and "ranchettes" include the advantages and disadvantages to the farmer of cluster development and determination of minimum parcel sizes necessary for a farmer to consider investment for long term agricultural use.

Directive: In order to maintain a supply of land adequate to support the critical mass of the county's agricultural industries, and to limit conflicts between agricultural practices and residential uses, the Agricultural Resources Element shall establish policies that maintain parcels in agricultural areas predominantly in sizes that farmers would be willing to lease or buy for farming purposes.

Goal AR-3: It is a goal of Sonoma County to maintain the maximum amount of land capable of the production of food, fiber and plant materials in parcel sizes that a farmer would be willing to lease or buy for agricultural purposes.

Objective AR-3.1: It is the County's objective to maintain the integrity of lands within agricultural land-use categories by precluding their conversion to residential or commercial uses.

Objective AR-3.2: It is the County's objective, in those agricultural land-use categories where small parcels may be permitted, to: 1) maintain the largest land mass for agricultural use, and 2) limit the number of small lots in any one area to avoid the potential conflicts associated with residential intrusion.

The County shall utilize the following policies to implement these objectives:

AR-3a: In the "Vineyard and Specialty Crop" land-use category, new parcels shall not be allowed which are smaller than 40 acres.

AR-3b: In considering subdivisions of lands within "Grazing, Forage Crops, and Livestock" use areas, one-half of the permitted residential density, or three of the permitted residential building sites (whichever is greater), shall be allowed to be clustered on parcels as small as one and one-half acres but no larger than ten acres; all other parcels created in this category shall have a minimum lot size at least as great as the maximum density specified by the applicable land-use plan map. This policy shall not be applicable to lands subject to a Williamson Act Contract.

AR-3c: Where clustered subdivision is utilized, clusters of small lots on one site shall be separated from clusters on another site unless it is clearly demonstrated that the resulting parcel pattern will not create the appearance of, or conflicts associated with, residential intrusion.

AR-3d: Where clustered subdivision is permitted, natural features such as parks, ridge tops, creeks, and substantial tree stands shall be utilized wherever practicable to separate the small parcels from the farming residuals.

AR-3e: Where clustered subdivision occurs, a long-term agricultural easement shall be placed on the residual farming parcel(s). The language of the easement shall specify the maximum number of additional lots which are permissible based on the applicable density indicated on the land-use plan map. The easement shall be conveyed to the County or other appropriate non-profit organizations.

3.4 POLICY TO MITIGATE CONFLICTS BETWEEN AGRICULTURAL AND NON-AGRICULTURAL USES IN DESIGNATED AGRICULTURAL PRODUCTION AREAS

Issues: Both on the urban fringe and in the midst of agricultural areas, parcelization has occurred which has resulted in residential use being the primary use of the land. Complaints about noise, odors, flies, spraying and similar "nuisances" attendant to agricultural practices have discouraged and sometimes prevented farmers from managing their operations in an efficient and economic manner. Without clear policy, it has been difficult for County decision-makers to balance the needs of the farmer with the concerns of his many residential neighbors. The problem is reciprocal: residential uses affect agricultural operations, and agricultural operations can adversely affect residential uses. The fundamental issue pertaining to the agricultural and residential use conflict is, having initially permitted the situation that caused the conflict, can government later create policy that disadvantages the residential user. Issues relating to creation of new lots include the desire of the farmer to provide parcels for his children, the perceived need to sell off a parcel for financial flexibility, the desire to retain the largest possible residual for the farming operation, and concern about creating residential parcels in an agricultural area.

Directive: In order to reduce potential conflicts between normal or routine agricultural practices and residential property owners, the Agricultural Resources Element shall establish policies that support the needs and practices of agriculture as the highest priority in areas designated for agricultural use on the land-use plan maps.

Goal AR-4: It is a goal of the County of Sonoma that farmers be allowed to manage their operations in an efficient, economic manner with minimal conflict with non-agricultural uses.

Objective AR-4.1: It is the County's objective to apply agricultural land-use categories only to areas capable of the commercial production of food, fiber and plant material and to establish agricultural production as the highest priority use in these areas.

Objective AR-4.2: It is the County's objective to designate land areas where the primary use is residential or natural resource conservation with a land-use category which does not imply that the primary use of the land is or could be agricultural production. While farming activities may occur in these areas, the highest priority may not be accorded to the agricultural use.

The County shall implement the above objectives by utilizing the following policies:

AR-4a: The primary use of any parcel within the three agricultural land-use categories shall be agricultural production. Residential uses in areas so designated shall recognize that the primary use of the land may create agricultural "nuisance" situations, such as flies, noises, odors, and spraying of chemicals.

AR-4b: Where a discretionary development permit is sought at the urban fringe adjacent to agricultural land-use category, protection of agricultural operations shall be afforded by establishment of a natural or man-made buffer between the agricultural land-use and the residential use. Said buffer shall occur on the parcel for which a discretionary permit is sought and shall favor protection of the maximum amount of farmable land.

AR-4c: A "Nuisance" or "Right to Farm" Ordinance shall be prepared which is applicable to all lands designated for agricultural use on the land-use plan maps.

AR-4d: The provisions of the existing state nuisance law shall be enforced by the appropriate County departments with diligence and vigor.

AR-4e: Specific measures, including any necessary ordinances, that would effectuate voluntary purchase and/or transfer of development rights from agricultural areas to designated non-agricultural areas shall be prepared for consideration by the appropriate decision-making bodies.

AR-4f: In areas experiencing conflict between agricultural and residential uses, agriculture shall be given priority in those areas which are designated for agricultural use on the Land-use Plan Maps under provisions of the California Agriculture Code; in areas of conflicting agricultural uses, an existing agricultural use shall have priority over any proposed new uses.

3.5 POLICY TO REGULATE THE LOCATION AND INTENSITY OF AGRICULTURE-RELATED COMMERCIAL/INDUSTRIAL USES

Issues: Approaches to permitted commercial/industrial uses in agricultural areas in the county have varied in the past two decades: As of 1986, the zoning ordinance permitted processing of products grown on the premises and a variety of commercial uses -- sometimes unrelated to agricultural production -- in the agricultural districts (AE, A1 and A2); the agricultural land-use categories of the 1978 general plan were silent with regard to commercial use, leading to a policy that no commercial use was permissible, other than agricultural processing and minor sales of products grown on premises. Issues related to the introduction of commercial/industrial uses into agricultural areas focus on: 1) their relationship to the agricultural resource; 2) the potential conflict with the physical resource; 3) the size, scale and intensity of the use; and 4) the growth-inducing and/or land-use conversion potential they might generate.

Directive: In order to support, promote and facilitate agricultural production activities, the Agricultural Resources Element, in conjunction with the Land-use Element, shall establish policies which will permit certain agriculturally-related commercial/industrial uses on lands designated for agricultural use by the land-use plan maps.

Goal AR-5: It is a goal of Sonoma County to facilitate agricultural production by allowing certain agriculturally related commercial and industrial uses to be conveniently and accessibly located in agricultural production areas as appropriate to the primary agricultural activity in an area.

Objective AR-5.1: It is the County's objective to facilitate agricultural production by allowing small, medium and large-scale agricultural processing facilities and uses in all agricultural land-use categories subject to the appropriate planning and/or permit procedures.

Objective AR-5.2: It is the County's objective to facilitate agricultural production by permitting limited agricultural service uses that support local agricultural activities and are not detrimental to the long-term agricultural use in the area.

The following policies shall be utilized to implement the above objectives.

AR-5a: In all three agricultural land-use categories, processing facilities shall be permitted as follows:

- (1) Wineries up to 25,000 cases, or comparable sized facilities for other agricultural products, may be allowed subject to a use permit which may be approved on consent calendar unless appealed.
- (2) Wineries producing between 25,000 and 125,000 cases per year, or comparable sized facilities for other agricultural products, are permissible subject to rezoning to an Agricultural Services Combining District and approval of a use permit. Processing of these permits shall be accomplished concurrently, with Board of Supervisors becoming the decision-making body for both the rezoning and use permit.
- (3) Wineries producing over 125,000 cases annually, or comparable sized facilities for other agricultural products, are permissible subject to approval of general plan amendment to the Resource-Related Commercial/Industrial overlay; the amendment, rezoning and use permit may be processed concurrently.

AR-5b: Agricultural service uses that support local agricultural production, that are clearly subordinate to the on-site agricultural production, and that do not adversely affect the essential agricultural production activity of the area may be permitted, consistent with the specific requirements of the three agricultural land-use categories, as follows:

- (1) Minor agricultural services, defined as a home occupation and limited to a maximum of one employee, are permissible in all three categories.
- (2) Small-scale agricultural services, defined as having more than one employee but limited to uses that (a) are clearly subordinate to on-site production; (b) support local agricultural production; (c) do not adversely affect agricultural production in the area; (d) are limited in size to using a maximum of 1/2 acre of land, may be allowed only in "Diverse" and "Grazing, Forage Crops, and Livestock" categories. Approval of these uses shall be subject to rezoning to Agricultural

Service Combining District. Rezoning and use permits shall be processed concurrently with Board of Supervisors as the decision-making body.

- (3) Agricultural services that occupy more than 1/2 acre require a general plan amendment to add the Commercial/Industrial overlay; any rezoning and use permit may be processed concurrently. These uses are limited to the "Diverse" and "Grazing, Forage Crops, and Livestock" categories.

AR-5c: The following findings shall be required to be adopted prior to the approval of any quasi-judicial discretionary development permit for agricultural services, including but not limited to use permit and design review:

1. The facility or service is adequately buffered to protect agricultural production on-site or in the immediate area.
2. The facility or service is compatible with existing agricultural activities and existing residential concentrations in the area.
3. The facility or use will not be growth-inducing.
4. The proposed facility or use does not detract from, degrade or conflict with agricultural production on-site or in the area.
5. The proposed facility or use does not create a concentration of commercial uses in the immediate area.

AR-5d: Approval of any general plan amendment to add a resource-related overlay designation shall conform to the following criteria:

1. The facility or service is needed to support agricultural production on-site or in the immediate area.
2. The facility or service is compatible with pre-existing uses.
3. The facility or service will not be growth-inducing.
4. There is no proximate urban community where such facility or service is accommodated by existing zoning, or the facility or service is not compatible with the urban nature of the existing commercial or industrial zone.
5. The proposed use does not detract from, degrade, or conflict with agricultural production in the area.

AR-5e: Undue local concentrations of any commercial or industrial uses, even if related to surrounding agricultural activities, are detrimental to the primary use of the land for the production of food, fiber and plant materials and shall be prohibited.

AR-5h: Storage facilities for processed agricultural products shall be required to be associated with the processing facility, sized according to the processing facility, and located on the same parcel and proximate to the processing facility. Bottling, canning, or packaging of the product shall be limited to those agricultural commodities that receive other types of processing on-site.

3.6 POLICY TO REGULATE THE LOCATION AND INTENSITY OF VISITOR-SERVING COMMERCIAL USES WITHIN AGRICULTURAL AREAS

Issues: The extent to which visitor-related uses should be allowed within agricultural areas is an important issue, along with determination of appropriate locations and scales or sizes for such facilities. The benefits and potential adverse impacts of visitor-related uses vary by agricultural industry. Wine-tasting is an important promotional component of the viticulture industry, yet the people who come to enjoy the "wine country" may create a conflict with the necessary practices of land-intensive farming. The "people versus practices" conflict suggests a limit to tourist activities in vineyard areas, most of which are sufficiently proximate to communities which afford opportunities for visitor services such as lodgings and restaurants.

In areas where agriculture is land-extensive, some conflicts between visitors and agricultural practices can be mitigated more easily, if only by the greater amount of land available to separate the activities. In these areas, small-scale visitor services, including restaurants and lodgings, and some commercial outdoor recreation could promote the agricultural activity and provide a secondary income source for the farmer or rancher without hindering the primary use of the land.

Directive: In order to promote the County's agricultural industry, the Agricultural Resources Element shall establish policies which will allow specific and limited visitor-serving facilities in agricultural areas as designated on the land-use plan maps.

Goal AR-6: It is a goal of the County of Sonoma that development of new visitor-serving uses and facilities in agricultural areas occur in a manner which is limited in scale and locations, so that it will be beneficial to the agricultural industry and farm operators and compatible with long-term agricultural use of the land.

Objective AR-6.1: It is the County's objective to permit specific and limited visitor-serving uses and facilities in agricultural production areas where such activities support and do not adversely affect the agricultural production activities of the area. It is the County's objective to limit visitor-serving uses in the "Vineyard and Specialty Crop" land-use category to wine-tasting rooms and stands for the sale of

products grown or processed in Sonoma County; in the "Diverse Agriculture" and "Grazing, Forage Crops, and Livestock" categories, it is the county's objective to permit a broader range of visitor-serving uses, including "bed and breakfast" inns and small restaurants.

Objective AR-6.2: It is the County's objective that the highest priority in all agricultural land-use categories be given to agricultural production activities and that any visitor-serving facilities be related to agricultural promotion and secondary and incidental to the agricultural production.

The following policies shall be utilized to accomplish the above objectives:

- AR-6a:** Visitor-serving uses allowable on lands designated in the "Vineyard and Specialty Crop" category shall be limited to wine-tasting rooms, occasional cultural events and sales of products ancillary and related to the agricultural product. Neither restaurants nor lodgings are deemed compatible with this category and shall be prohibited on lands so designated.
- AR-6b:** The "Recreation and Visitor-serving Commercial" overlay, when utilized with the "Vineyard and Specialty Crops" base category, shall accommodate only those restaurants and/or lodgings existing as of 1986; facilities shall be prohibited from further expansion or intensification.
- AR-6c:** Non-agricultural land-use categories shall not be applied to lands in agricultural areas for purposes of permitting recreational or visitor-serving uses or facilities.
- AR-6d:** Visitor-serving uses permissible in the "Grazing/Forage Crop/Livestock" or "Diverse Agriculture" categories shall be limited to tasting rooms, stands for sale of products grown and processed in the county, and small lodging facilities of 5 or fewer rooms. Lodging facilities of 6-15 rooms or campgrounds with a maximum of 30 sites may be permitted subject to approval of a "Recreation and Visitor Commercial" overlay for that purpose.
- AR-6e:** New visitor-related services and existing tasting rooms and stands for the sale of agricultural products in any agricultural land-use category shall be permitted to promote and market only those agricultural products grown in Sonoma County.

AR-6f: The following findings shall be required to be adopted prior to the approval of any quasi-judicial discretionary development permit for "recreation and visitor-serving" uses in agricultural areas -- including but not limited to use permits and design review.

1. The facility or service is adequately buffered to protect agricultural production on-site and in the immediate area.
2. The facility or service is compatible with existing agricultural activities and existing residential concentrations in the area.
3. The facility or use will not be growth-inducing.
4. Discretionary permits for visitor facilities and uses shall be subject to a condition requiring the management of the facility or use to notify visitors that agricultural activities occur in the area which may be obnoxious but which have priority over visitor-related uses.
5. The proposed facility or use does not detract from, degrade or conflict with production agriculture on-site or in the area.

AR-6g: Approval of any general plan amendment to add "Recreation and Visitor-serving Commercial" overlay designation shall conform to the following criteria:

1. The facility or service promotes agricultural production in the area.
2. The facility or service will not be growth inducing.
3. Uses allowable with the proposed overlay designation will not detract from, degrade, or conflict with production agriculture or its practices in the area.
4. The cumulative number of such uses authorized in the area is not excessive and will not adversely affect traffic conditions and the movement of agricultural vehicles.

AR-6h: Recreational facilities for off-road vehicles of any size shall not be permitted within any land area designated within an agricultural use category.

AR-6i: Undue concentrations of visitor-serving uses in a local area, even if related to surrounding agricultural activities, are detrimental to the primary use of the land for the production of food, fiber and plant materials and may constitute grounds for denial of proposals for such uses.

AR-6j: Compatible visitor-serving facilities and their permissible sizes or intensities shall be defined in the zoning ordinance.

3.7 POLICY FOR HOUSING FOR FARM-WORKERS AND FARM FAMILY MEMBERS

Issues: Issues related to the provision of farm-worker housing are numerous: whether the County should be involved in facilitating its provision; whether farm-worker or farm-family housing should be permitted in addition to dwellings which are allowable with the applicable density; whether the provision of additional housing is growth-inducing; and where transient farm labor housing is most appropriately located. Three aspects of the issue of farm worker housing require separate consideration: (1) the location and type of housing for transient farm labor; (2) the amount and location of permanent farm labor housing; and (3) the need/desire for housing for family members. Numbers of seasonal laborers are needed for a short period of time each year, particularly to harvest orchard and vineyard crops. Providing permanent onsite housing which is only occupied for several weeks a year is both expensive and an "attractive nuisance." However, providing housing off-site, either in towns or in "labor camps", does not always meet the farmer's requirement to have the worker on site when needed. The number of agricultural employees needed on a permanent basis to serve a given industry and the location and permanence of housing units for those workers are also facets of the housing issue. Many farmers, particularly in land-extensive industries, own and/or farm several parcels which may not be contiguous. Clustering permanent employee housing on the least productive soils offers the advantage of preserving the most productive soils for farming, but may create long-term problems if the parcel is sold separately from the rest of the ranch. A final question is whether the farmer should be allowed to provide housing, in addition to units permitted by the applicable density, for parents or adult children who do not work full-time on the farm.

Directive: Efficient management of agricultural production activities requires adequate numbers of employees to be housed on both a seasonal and a permanent basis; the Agricultural Resources Element shall establish policies which will allow limited amounts and types of housing to meet the various needs of farmworkers and farm operators.

Goal AR-7: It is a goal of the County of Sonoma that limited amounts of farmworker and farm family housing be developed in agricultural areas in a manner which will meet the shelter needs of transient and permanent farmworkers and family farmworkers.

Objective AR-7.1: It is the County's objective that farm operators be allowed to provide sufficient housing for permanent, transient and full-time family agricultural employees to maintain agricultural production activities, exclusive of housing permitted by the applicable land-use density.

Objective AR-7.2: It is the County's objective that agricultural employee housing be located in a manner which will be beneficial to the efficiency of the farming operation and have minimal impact on productive farmland and that such housing not be the primary use of any parcel.

Objective AR-7.3: It is the County's objective to assist any non-profit organizations or agencies in their efforts to establish a program to provide safe and adequate housing for transient farm workers.

Objective AR-7.4: It is the County's objective to permit a limited number of farm family housing units in addition to the number of dwellings allowed by the applicable density on the land-use plan map.

The County shall utilize the following policies to achieve these objectives:

AR-7a: Agricultural employee housing shall be permitted in addition to permitted density and in accordance with the needs of a particular industry and the size and scale of the specific operation. Specific criteria to establish the permitted number of agricultural employee units shall be expressed in the Sonoma County zoning ordinance.

AR-7b: Agricultural employee housing shall be limited to units that are removable and not on permanent foundations. Standards shall be established in the zoning ordinance.

AR-7c: Housing for members of the farm operator's immediate family shall be permitted in addition to permitted density at the ratio of one housing unit per 20 acres up to a maximum of four units per parcel. Said unit(s) shall not be subdivided from the primary agricultural parcel, shall generally be located in proximity to the main unit, and shall be occupied solely by a member of the family who is engaged at least part-time in the family farming operation.

AR-7d: The County and the Community Development Commission shall assist appropriate agencies in developing programs for the housing of transient farm workers.

AR-7e: Agricultural employee housing may be clustered on a portion of an agricultural parcel and/or a non-contiguous parcel under the same ownership -- provided that the units are mobile homes on a non-permanent foundation.

3.8 POLICY TO ASSIST IN STABILIZING FARMER'S ECONOMIC SITUATION

Background and Issues: The capacity to earn a reasonable return from farming is a major determinant of a farmer's decision to continue farming. Cyclical crop yields associated with weather variations as well as price fluctuations create an uncertain economic picture for many farmers and ranchers. In addition, their homes and business are financially tied together and income often is ploughed back into the farm operation, making him "land rich but cash poor." Thus, following a bad economic year, the farmer may find it necessary to borrow more heavily than normally. Although agricultural lending practices may have changed recently due to adverse experience nationally with agricultural loan portfolios, in the past some agricultural loans may have been extended based on the value of property in non-agricultural use, rather than its agricultural income potential.

These factors have resulted in many farmers supporting (1) higher permissible densities and (2) clustered zoning that enable them to subdivide or secure a loan on a small portion of the farm. This practice, however, has tended to create the speculative development pressure and the agricultural/residential conflicts which have undermined stability in agricultural areas. The concepts of purchase and transfer of development rights have been discussed widely nationally and locally as one potential measure to address this situation. As early as 1975, the County conducted a study on transfer of development rights. While a number of state and local governments have implemented successful programs, few have been tried in California, and none to date in Sonoma County. However, ongoing programs in Maryland, Massachusetts, King's County, Washington and Marin County offer Sonoma County the benefit of on-the-ground experience. Together these various programs suggest that both purchase and transfer of development rights programs are tools that have potential merit for the preservation and protection of agricultural land. These programs are neither complete solutions nor "quick fixes"; they do, however, in certain circumstances offer the farmland owner access to capital to continue to farm without having to sell off or develop the farmland unit.

Issues surrounding reduction of economic pressure to convert land from agricultural use include the question of the County's role, the appropriate types of programs, the sources of funding and the locations to which limited financial resources should be targeted.

Directive: In order to contribute to the stability of the agricultural economy, the Agricultural Resources Element shall establish policies that encourage creation of sources of operating capital without jeopardizing the land resources utilized for agricultural production.

Goal AR-8: It is a goal of the County of Sonoma to assist with public and private agencies in formulating programs that could provide alternative sources of capital for agricultural production without selling or encumbering the farmland as collateral; these measures include but are not limited to programs for purchase and transfer of development rights.

Objective AR-8.1: It is the County's objective that land use regulations not arbitrarily restrict potential agriculturally-related enterprises which could be supplementary sources of income for farm operators.

Objective AR-8.2 It is the County's objective to make available to the farmer a preferential property tax assessment based on the productive value of the land through the State Land Conservation (Williamson) Act program.

Objective AR-8.3 It is the County's objective to participate with the cities to establish programs for agricultural re-use of treated wastewater in a manner which would be economically beneficial to agriculture.

Objective AR-8.4: It is the County's objective to investigate funding mechanisms and to assess whether or not voter support is sufficient to prepare a ballot measure for a purchase of development rights program in Sonoma County.

Objective AR-8.5: It is the County's objective to prepare a study of models of transfer of development rights programs.

The following policies shall be utilized to implement these objectives:

AR-8a: The County shall encourage agencies to sponsor a variety of on-going educational programs that assist the farmer in financial planning and shall provide technical assistance where appropriate.

AR-8b: The County shall encourage programs for promotion and marketing of agricultural products grown in the county.

AR-8c: The County shall continue to participate in the State of California's Williamson Act program. Minimum requirements for execution of a Williamson Act contract shall be a minimum parcel size of 10 acres for Type 1 contracts and 40 acres for Type 2 contracts unless otherwise established by State Law, and a minimum production of \$2,000 gross annual income, per resolutions 28630 and 28631, to enable small farmers as well as large farmers to participate in the tax benefits.

AR-8d: A minimum parcel size of 40 acres shall be required for subdivision of any Williamson Act contracted land; zoning in some instances may require that minimum lot sizes be larger.

AR-8e: Any purchase or transfer of development rights program for agricultural lands in Sonoma County shall be a voluntary program. The County shall designate priority areas for purchase of development rights if and only if funding is available to purchase said rights.

AR-8f: The planning department shall prepare a transfer of development rights ordinance for consideration by the Board of Supervisors.

3.9 POLICY TO STREAMLINE PERMIT PROCESSING FOR AGRICULTURAL USES IN DESIGNATED AGRICULTURAL LAND-USE CATEGORIES.

Issues: The procedural requirements for permits to construct an agricultural facility are both time consuming and financially frustrating to many farmers. In areas designated with an agricultural land-use category, streamlining the permit processing to focus on health, safety and environmental issues would facilitate farming. Whether agriculture should be treated differently by permit processing procedure than any other industry is, however, an issue.

Directive: The Agricultural Resource Element shall establish policies to streamline permit processing for agricultural uses and facilities located on lands designated in an agricultural use category; consideration of such permits shall focus on public health and safety issues and environmental quality.

Goal AR-9: It is a goal of Sonoma County in areas designated by any of the three agricultural land-use categories to have permit processing procedures that are rapid and efficient.

Objective AR-9.1 It is the County's objective to establish permit processing procedures that will simplify and shorten the decision-making process for permits on lands designated for agricultural use.

The following policies shall be utilized in achieving these objectives:

AR-9a: Multiple permits for agricultural facilities and/or uses shall be processed concurrently with the highest-level decision-making body making the decision for all required permits.

AR-9b: In all agricultural land use categories, barns and similar agricultural support structures shall be considered a part of the scenic environment and shall not require design review approval.

AR-9c: Notwithstanding Policy 9b, in areas designated with agriculture land-use categories where local design review has been implemented by community choice, it is recognized that an additional level of permit processing may be required to accommodate the design review process.

AR-9d: A consent calendar approval process shall be established to expedite processing of some agricultural uses which require a use permit. The following permits for agricultural uses may be approved by consent calendar on a regularly scheduled Board of Zoning Adjustments calendar unless the consent calendar status is appealed in writing no later than the date and time scheduled for decision.

1. Use permits for small-scale processing facilities involving no public wine-tasting or visitor facilities.
2. Use permits for dairies.
3. Grading permits for agricultural uses.
4. Use permits for commercial aquaculture facilities.
5. Use permits for small-scale agricultural services not involving substantial vehicular traffic.

AR-9e: Temporary use permits for (1) non-permanent housing for transient labor and (2) occasional cultural events may be approved administratively by the planning director, subject to the receipt of all necessary permits from other appropriate agencies.

AR-9f: The County shall maintain regulations which exempt certain agricultural structures from construction requirements of the Uniform Building Code, subject to limitations on the size, occupancy and use of such structures.

AR-9g: In the processing of permits for agricultural structures, uses or facilities, conditions shall be limited to those that pertain to the use, facility or structure that is the subject of the permit, unless health or safety issues must be resolved regarding the entire operation.

3.10 POLICY RELATED TO AQUACULTURE AND THE COMMERCIAL FISHING INDUSTRY

Issues: Question has been raised as to whether the service needs of the fishing industry should be permissible uses in agricultural areas. The fishing industry, as producers of a food source and including both aquaculture and fisheries, are land-based operations with similarities to other food producing industries such as the dairy, the fruit and wine, or the poultry industries. To the degree that the commercial and industrial support needs of the fishing industry relate to food production or harvesting, those needs are appropriately addressed in this element. No provision of this section shall be deemed to apply to sport fishing.

Directive: Based on the similarities of the fisheries industry to the production of other food sources, the Agricultural Resources Element shall establish policies which are applicable.

Goal AR-10: It is a goal of the County of Sonoma to provide for the raising, harvesting and production of fish in the same manner as the harvesting and production of agricultural products.

Objective AR-10.1: It is the County's objective that aquaculture and its related facilities and activities be permitted in all areas designated for agricultural use.

Objective AR-10.2: It is the County's objective to provide opportunities for development of support facilities for the fishing industry on lands within the urban service area of Bodega Bay and on agricultural lands adjacent to that area.

Objective AR-10.3: It is the County's objective to promote products of the fishing industry in the same manner as agricultural products.

The County shall utilize the following policies in achieving these objectives:

AR-10a: Aquaculture and related facilities, including fish processing, shall be permitted in the same manner as other agricultural production uses.

AR-10b: Support facilities for off-shore commercial fishing, including but not limited to equipment storage, processing facilities, and canneries, may be permitted on lands designated for agricultural land-use adjacent to the urban service boundary of Bodega Bay. Where the facility or use does not require urban services, a general plan amendment to the Resource Related Commercial/Industrial Overlay and a rezoning to the agricultural services zoning district shall be required. Where the facility or use does require urban services, extension of such services may be permitted on lands adjacent to the urban boundary solely for that purpose.

AR-10c: All policies and programs related to marketing of Sonoma County agricultural products shall apply to products of the County's commercial fisheries industry.

4.0 PROGRAMS TO IMPLEMENT AGRICULTURAL POLICY: 1987-1992

Agriculture Resources Program 1: Revisions of Agricultural Zoning District Regulations

Type of Program: Zoning

Responsible Agency: Planning Department

Timeframe: Within One year of adoption of revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: AR-3a, AR-3b, AR-4a, AR-5a, AR-5b, AR-5c, AR-5f, AR-6a, AR-6d, AR-6f, AR-6h, AR-6j, AR-7a, AR-9d, AR-9e

Program Description: (1) Rewrite agricultural zoning districts to: eliminate to degree practicable uses that create conflicts with acceptable agricultural practices; provide for seasonal stands for the sale of agricultural products grown in Sonoma County, minor agricultural services, custom farming operations. (2) Amend the definition section to include wine-tasting rooms, minor agricultural services, and small- intermediate- and large-scale processing facilities. (3) Repeal the existing A2 district. (4) Add an Agricultural Services combining district. (5) Amend Section 26-208 et. seq. (Administration) to create consent calendar approvals and administrative approvals of specified agricultural facilities and uses.

Agriculture Resources Program 2: Subdivision Ordinance Regulations in Agricultural Areas

Type of Program: Subdivision Ordinance

Responsible Agency: Planning Department

Timeframe: Within two year of adoption of revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: AR-3c, AR-3d, AR-3e, AR-4b

Program Description: Prepare for consideration an amendment to Chapter 25 of the Sonoma County Code (1) providing findings for approval of clustered residential lots in the "Grazing, Forage Crops, and Livestock" category and requiring a long term protective easements when clustered subdivision has occurred; (2) providing subdivision conditions to minimize conflicts and maximize long term agriculture protection.

Agriculture Resources Program 3: Transfer of Development Rights and Right-to-Farm Ordinances

Type of Program: General Police Power

Responsible Agency: Planning Department

Timeframe: Right-to-Farm Ordinance within six months of adoption of revised general plan; Transfer of Development Rights Ordinance within two years of adoption of revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: AR-4c,d,e, AR-8i

Program Description: Prepare for consideration by the Board of Supervisors: (1) a Right-to-Farm Ordinance which shall describe normal farm practices expected to occur in agricultural areas and insure the right of the farmer to continue such practices subject to appropriate health and safety standards. Said ordinance shall specify its application solely to areas designated with agricultural land-use categories but shall be mailed annually to all property owners with tax bills; and (2) a transfer of development rights ordinance establishing requirements and procedures for transfer of development rights from certain agricultural areas to specified receiving areas; receiving areas may be jointly identified by a city through a joint powers agreement.

Agriculture Resources Program 4: Agricultural Marketing Assistance

Type of Program: Administrative
Responsible Agency: Economic Development Board
Timeframe: Within Six months of adoption of general plan
Budgetary Impact: Appropriation from General Fund required
Policy Reference: AR-1a, AR-1b, AR-1c

Program Description: The Economic Development Board would (1) create and promote use of an logo which can appear on all agricultural products or their packaging to identify the product as coming from Sonoma County; (2) enlist and cooperate with Sonoma State University to do a research study focused on techniques and methods of marketing farm products.

Agriculture Resources Program 5: Transient Farm-worker Housing

Type of Program: Housing subsidy
Responsible Agency: Board of Supervisors and Housing Authority
Timeframe:
Budgetary Impact: None: program undertaken only if grant monies are secured or if Community Development Block Grant monies are available for this purpose.
Policy Reference: AR-7d

Program Description: The Housing Authority would consider establishing a program to provide transient farm workers with mobile housing which could be located on any specific parcel during harvest; consideration may be given to use of said mobile housing by other needy groups during the non-harvest season.

Agriculture Resources Program 6: Establishment of an Agricultural Advisory Committee

Type of Program: Administrative

Responsible Agency: Appointment by Board of Supervisors; staffing by Planning Department

Timeframe: Within Six months of the adoption of the revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: AR-7b, AR-7d, AR-8b,c Ar-8d

Program Description: Appoint an Agricultural Advisory Committee with representation of geographic areas and the major agricultural industries or commodity groups. The Agricultural Advisory Committee shall be a policy-oriented committee and shall perform the following functions to implement and monitor policy established in the Agricultural Resources Element:

- A. Review and comment to the Board of Supervisors or delegated decision-makers on the effect on the agricultural industry and on agricultural lands of:
 - (1) Proposed revisions to county ordinances.
 - (2) Proposed annexations or extensions of urban services at or near agricultural lands.
 - (3) Establishment, disestablishment and subdivision of agricultural preserves.
 - (4) Subdivisions on agricultural lands, and parcels adjacent thereto.
 - (5) State Important Farmlands mapping updates.
- B. Provide technical review and updating of agricultural employee housing needs.
- C. Monitor and provide technical assistance to committees and boards creating and administering economic, financial and housing programs targeted to the agriculture industry.
- D. Coordinate with and assist any non-profit land trust which purchases easements and/or development rights; purchases agricultural lands and leases them back to the farmer on a long-term basis; provides low-interest loans for specified farm improvements.
- E. Co-ordinate with and provide assistance for the creation of a private non-profit membership association which provides for investment in the production, processing, distribution, of agricultural commodities.

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RESOURCE CONSERVATION ELEMENT PUBLIC HEARING DRAFT



Sonoma
County
General Plan



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PUBLIC HEARING DRAFT

**Sonoma County General Plan
RESOURCE CONSERVATION ELEMENT**

**Prepared for Public Hearings by the
Sonoma County Planning Commission**

December 4, 1986

**Sonoma County Planning Department
575 Administration Drive
Santa Rosa, California 95401**

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1.0 INTRODUCTION

1.1 AUTHORITY AND PURPOSE

Section 65302(d) of the Government Code of the State of California directs that general plans include a conservation element for the conservation of natural resources including water, forests, soils, rivers, harbors, fisheries, wildlife, minerals, and other natural resources. The Resource Conservation Element of the Sonoma County General Plan is intended to provide guidelines for the conservation, preservation, enhancement and utilization of Sonoma County's resources. Effective long-term resource management provides the county with two basic benefits: First, it enhances the county's economic base by promoting the rational production and utilization of the county's resources; and second, it provides policies to guide land-use decisions in a manner that will contribute to the conservation of resources to maintain their long-term productive capacities.

1.2 RELATIONSHIP TO OTHER ELEMENTS

The Resource Conservation Element encompasses many issues which are also addressed by the Open Space Element and has been closely coordinated with it to insure internal consistency. The Resource Conservation Element emphasizes the conservation and management of resources that have value as economic commodities or factors of production, while the Open Space Element establishes policies to preserve natural resource areas. Agricultural resources policy is expressed in a separate element. The Land-use Element complements the policies of the Resource Conservation Element; mapped land-use classifications, including permitted uses, densities, and intensities, are consistent with the conservation of resource lands and maintenance of their long-term productivity.

1.3 SCOPE AND ORGANIZATION

The policy framework of the Resource Conservation Element is organized as nine broad groupings of resource categories and comprises a statement of policies applicable to each designation. The nine categories are as follows:

- | | |
|-------------------------------------|-------------------------|
| - soil resources | - geothermal resources |
| - water resources | - mineral resources |
| - forest and woodland resources | - energy resources |
| - vegetation and wildlife resources | - air resources quality |
| - fishery resources | |

2.0 SOIL RESOURCES POLICY

Soil resources policy addresses two separate components: 1) preventing lands with important productive soils from being converted to uses that would preclude their continued long-term availability for resource uses, and 2) promotion of soil management and conservation practices that will maintain productivity of these land resources.

2.1 CONSERVATION OF LANDS WITH SOILS SUITABLE FOR AGRICULTURE AND TIMBER PRODUCTION

Introduction: The soils of Sonoma County have been mapped and analyzed by the U. S. Soil Conservation Service (SCS) which has identified some 15 major associations representing 75 soil series. The SCS has interpreted the behavior of these soils under various circumstances and their suitability for various land uses. The Sonoma County Soil Survey evaluates runoff potential; erosion hazard; shrink/swell behavior; and suitabilities for farming, timber, excavations, septic leachfields, roads, and structures.

Soil interpretations for farmlands have also been mapped by the California Department of Conservation to provide a monitoring program of the state's farmland conversion to and from agricultural use. The classifications used for the farmlands inventory, in order of decreasing productivity, are prime farmlands, farmlands of statewide importance, unique farmlands, and farmlands of local importance. Important farmland soils are scattered throughout the county but are concentrated primarily in the Sonoma Valley, west Sebastopol, west Santa Rosa, Alexander Valley, and Dry Creek Valley regions. Soil, climate, topography and water combine to make these lands highly productive agricultural areas. However, agricultural soils are frequently found on lands which are desirable for building sites as they are generally located in flat valleys and have few physical constraints. Areas adjacent to cities are under pressure for urban or rural residential development. Of the county's 1,007,985 acres, approximately 200,000 acres have soils suitable for agricultural production such as forage and cultivated crops. Another 290,000 acres have soils suitable for grazing.

Approximately 508,000 acres, or half of the county, have soils which are suitable for a variety of resource uses including commercial timber production, watershed, wildlife habitat, and recreation. These soils are also subject to high erosion hazards, have rapid water runoff, and poor septic suitability. The land-use element includes six agriculture and resource categories which are applied to lands with soils suitable for resource production.

Directive: The Resource Conservation Element shall establish policies which will promote and encourage the conservation of important soil resources to protect their long-term productivity and economic value.

Goal RC-1: It is a goal of Sonoma County to preserve and maintain soil resources for their economic, conservation, and open-space values.

Objective RC-1.1: It is the County's objective that lands containing prime agricultural and productive woodland soils be preserved and not be converted to incompatible residential, commercial or industrial uses.

The County shall utilize the following policies related to soil resources:

- RC-1a:** The "Vineyards and Specialty Crops", "Dairies and Grazing" and "Livestock" and "Diverse Agriculture" land-use categories represent the mapped expression of areas where it is the County's intent to protect productive agricultural soils.
- RC-1b:** The "Timberlands" land-use category shall be applied to all lands subject to Timberland Production Zoning to protect soils suitable for timber production.
- RC-1c:** General plan amendments outside of designated urban service areas which involve the conversion of lands with Class I, II, or III soils as indentified in the Sonoma County Soils Survey to a residential, commercial, industrial, or public/quasi public base land-use category shall not be approved unless they conform to the following criteria:
- 1) The use is not in an agricultural production area and will not adversely affect agricultural operations.
 - 2) The supply of vacant residential, commercial, or industrial (as requested) land combined with potential new sites allowed by the plan within the sub-county planning regions are insufficient to accommodate projected populaton/employment projections.
 - 3) No other land with other soils classes is available for non-resource uses in the planning area.
 - 4) An overriding public benefit will be derived from the proposed use.

Amendments to an overlay category or to recognize a pre-existing use are exempt from this policy. Public uses such as parks and sewage treatment plants may be approved if an overriding public benefit exists.

- RC-1d:** The Planning Department shall annually present to the Board of Supervisors the California Department of Conservation's updated Important Farmland's Map and report on the amount of land in the county converted to and from agricultural use.

2.2 PREVENTION OF SOIL EROSION

Introduction: Although some types of soils are more susceptible to erosion, all soils benefit from conservation practices. Erosion can result in the loss of topsoil which may reduce yields of crops or forage and cause sedimentation problems downstream. Sediment can fill reservoirs and stream channels, reduce water quality and storage capacity, and damage wildlife habitats, such as fisheries. Erosion is caused by a combination of high rainfall, lack of vegetative cover, fragile soils, and steep slopes. Human activities which may exacerbate erosion include urban development, construction and maintenance of roads, general construction activities, logging, mining, agriculture and recreational activities.

Areas of particular concern include the Petaluma Valley where soil losses can be as high as 20 tons/acre/year, steep hillsides that are being brought into cultivation for wine grapes, and rangelands where overgrazing may occur. Dry Creek, Gualala River, Russian River, Sulphur Creek, Salmon Creek, Sonoma Creek, and Blucher Creek have accelerated streambank erosion which has adverse impacts on fish spawning areas.

Effective conservation measures for hillside erosion include conservation tillage, contour planting, terracing, cover crops, proper grazing and fencing and proper access road design and maintenance. Streambank protection practices such as steel piles, gabions, sacked concrete and rock filled post and wire may not be cost-effective for the landowner.

Directive: The Resource Conservation Element shall establish policies which will promote and encourage conservation and management practices that maintain the long term stability and productivity of soil resources.

Goal RC-2: It is a goal of the County of Sonoma to conserve its soil resources for their environmental significance as well as their productive value.

Objective RC-2.1: It is the County's objective that permitted types and intensities of use of various land areas be correlated with the natural ability of the area's soils to tolerate those uses without erosion or damage.

Objective RC-2.2: It is the County's objective to establish procedures for the prevention of soil erosion and the restoration of areas damaged by erosion.

The County shall utilize the following policies related to soil resources:

RC-2a: Structures and roads shall not be located on areas with slopes of 30 percent or greater. This section shall not render any existing parcel unbuildable provided Health Department and Building Department requirements can be met.

- RC-2b:** Any development project involving construction or grading near waterways or on lands with slopes over 10 percent shall have erosion control measures incorporated as conditions of approval.
- RC-2c:** The County shall encourage agricultural land owners and farm managers to work closely with the U. S. Soil Conservation Service and local Resource Conservation Districts to reduce the existing and potential erosion of agricultural lands.
- RC-2d:** Development projects on lands which contain a natural waterway or hillside erosion shall include a conservation program to minimize stream and hillside erosion. Measures which could be incorporated include fencing and revegetation.
- RC-2e:** On projects which are located near waterways or in areas with a high risk of erosion, development of improvements (building pads, driveways, roads) shall retain natural land forms to the extent possible.
- RC-2f:** An erosion and sediment control ordinance shall be prepared and submitted to the Board of Supervisors for its consideration.

3.0 WATER RESOURCES POLICY

Introduction: Natural drainage in Sonoma County occurs through six major watersheds. The Russian River watershed, the largest, drains approximately fifty-eight percent of the county. Sonoma Creek and the Petaluma River both flow through the southern part of the county into large estuaries leading directly into San Pablo Bay. The coastal areas are drained by the Estero Americano, the Gualala River, Salmon Creek and a number of smaller streams. Other surface waters include Lake Sonoma and a number of smaller lakes and reservoirs.

Water used for domestic purposes and agriculture in Sonoma County is generally of good quality. Many streams, however, have water quality problems resulting from the discharge of domestic, industrial, and agricultural waste into them. The North Coast Water Quality Control Board, Bay Area Regional Water Quality Control Board and the Bay Conservation and Development Commission regulate water pollution. The areas of jurisdiction by these agencies is shown in Figure RC-1. Discharges by regional and local sewage treatment plants into the Russian River and other streams were limited as of 1986 to winter periods when river levels are high. The City of Santa Rosa in 1986 was investigating several alternative sewage disposal systems, including some systems that would not be dependent on river discharge.

Sewage disposal in rural areas is by individual septic system. Communities such as Bloomfield, Sea Ranch, Cazadero, Kenwood, Fulton, Jenner, Camp Meeker, Freestone, Monte Rio, Valley Ford and other residential areas including

Mirabel Heights, Fitch Mountain, Hacienda, Salmon Creek, Forest Hills, Hollydale and Summerhome Park have varying degrees of septic problems. These areas are characterized by small lots which were legally recorded as subdivisions many years ago. Buildout and the conversion from summer homes to permanent occupancy can overtax septic systems and cause cumulative impacts such as excessive nitrate discharge and groundwater mounding which adversely affect groundwater quality.

Channel flow in the Russian River provides the primary source of domestic water supplies for the county's urban communities. Supplies to Santa Rosa, Sonoma, Petaluma, and several other communities are derived from Eel River diversion through the Potter Valley Tunnel in Mendocino County and from storage in Lake Mendocino and Lake Sonoma. The communities of Geyserville, Cloverdale, and Healdsburg draw their water supply from wells in the river gravel. Sebastopol and Rohnert Park depend on wells that tap local groundwater. The Public Facilities Element addresses water supply systems, including sources and projected demand.

Outside of urban communities with water systems, development is dependent on individual wells. Ground water availability is poor in large areas of the county, especially in the portions underlain by the Sonoma Volcanics and Franciscan geologic formations. The California Department of Water Resources completed a county-wide evaluation of groundwater resources in 1974 and more detailed reports were completed between 1982 and 1984 for the Sonoma Valley, Petaluma Valley, Alexander Valley, Healdsburg area, and Santa Rosa Plain. Intensive rural development in areas with scarce or marginal groundwater availability can lead to overdrafting of water supplies.

Groundwater is recharged through permeable recharge areas. Natural recharge takes place along Dry Creek, Salmon Creek, the Russian River, the Estero Americano, the Laguna de Santa Rosa, all areas underlain with younger alluvium, and in the Merced geologic formation (Figures RC-2a through 2i). Development in these areas can increase surface runoff and prevent recharge of the groundwater basin.

Directive: The Resource Conservation Element shall establish policies which promote and encourage the conservation and proper management of water resources so as to insure an adequate long-term supply of water for domestic, industrial, and agricultural use.

Goal RC-3: It is a goal of the County of Sonoma to conserve and enhance ground and surface water resources and protect their quality.

Objective RC-3.1: It is the County's objective to preserve watersheds and groundwater recharge areas by avoiding placement of any potential source of pollution in those areas with high percolation capabilities.

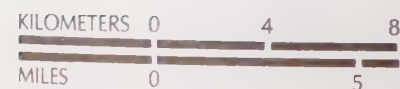
DRAINAGE BASINS/WATER AND AIR QUALITY JURISDICTIONS

RESOURCE CONSERVATION ELEMENT

- Drainage Basin Boundary
- Regional Water Quality Control Board Jurisdictional Boundary
- Regional Air Pollution Control Board Jurisdictional Boundary

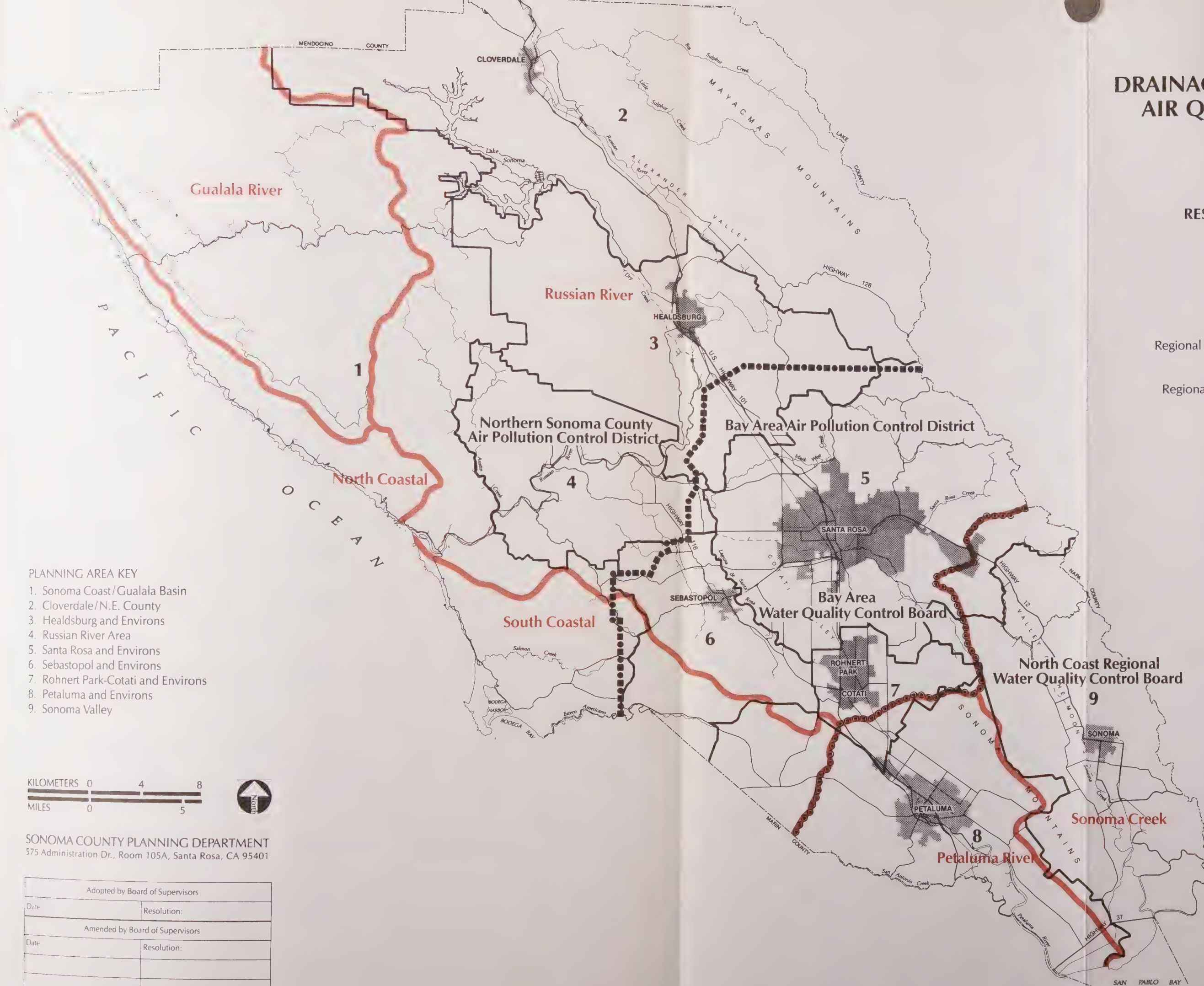
PLANNING AREA KEY

1. Sonoma Coast/Gualala Basin
2. Cloverdale/N.E. County
3. Healdsburg and Environs
4. Russian River Area
5. Santa Rosa and Environs
6. Sebastopol and Environs
7. Rohnert Park-Cotati and Environs
8. Petaluma and Environs
9. Sonoma Valley



SONOMA COUNTY PLANNING DEPARTMENT
575 Administration Dr., Room 105A, Santa Rosa, CA 95401

Adopted by Board of Supervisors	
Date:	Resolution:
Amended by Board of Supervisors	
Date:	Resolution:



Objective RC-3.2: It is the County's objective to provide standards for development in recharge areas that will promote maintenance of groundwater supplies.

Objective RC-3.3: It is the County's objective to preserve and enhance the quality of its surface and groundwater resources.

Objective RC-3.4: It is the County's objective that land-uses allowed in rural areas be consistent with the availability of groundwater resources to meet the needs of existing and projected future users.

The County shall utilize the following policies related to water resources.

RC-3a: Development proposals within urban service areas in designated recharge areas as shown on the "Aquifer Recharge Area Maps" on file in the planning department shall be required to utilize drainage plans and permeable surfaces which provide for the retention of stormwater at a level consistent with that which occurred naturally before development of the land. Grading, filling and construction shall not diminish or divert any stream flow.

RC-3b: Groundwater table monitoring programs shall be required as a condition of approval on all large-scale commercial and industrial uses utilizing wells.

RC-3c: The County shall continue to encourage research on and monitoring of local groundwater, watersheds, streams, and aquifer recharge areas in order to determine their water-supply value.

RC-3d: The County shall continue to encourage the construction of wastewater disposal systems which are designed for the reclamation and reuse of treated wastewater on agricultural crops.

RC-3e: The Environmental Health Department shall review all subdivision proposals requiring septic systems to insure that concentrations of leachants do not contaminate groundwater recharge areas. Establishment of on-site wastewater management districts shall be considered in important recharge areas.

RC-3f: The County shall pursue the formation of on-site wastewater management districts in communities and residential areas with septic problems

RC-3g: Proof of adequate groundwater shall be required for all development proposals in designated Class III and IV water-scarce areas.

RC-3h: The residential densities permitted by the land-use plan maps reflect the County's intent to conserve and properly manage groundwater supplies. Land-use amendments which would create densities higher than one dwelling unit per 20 acres shall not be approved in water scarce areas (Class III and IV water availability as shown on the Groundwater Availability Maps on file in the planning department) unless a geologic report evaluating groundwater has been prepared and indicates that groundwater supplies are adequate and will not be adversely impacted by the cumulative amount of additional development.

4.0 POLICY TO CONSERVE FOREST AND WOODLAND RESOURCES

Introduction: The redwood and other coniferous forests of Sonoma County were first extensively logged more than 100 years ago. Approximately 265,500 acres of commercial timberlands exist today. Mixed conifers predominate along the north coast consisting primarily of redwoods inward to the fog line (1500 to 2000 feet) interspersed with Douglas fir. Mixed evergreens and northern oak woodland are more characteristic further inland. Ponderosa pine forests extend along the northeastern county boundary south into the Mayacamas Mountains. Hardwoods such as tan oak, madrone, California laurel, and black oak grow within the coniferous forest areas and are the dominant species on 124,900 acres, over half of the total commercial acreage. Commercial harvesting of fuel wood requires the approval of the California Department of Forestry. An exemption to requirements for preparations of a timber harvest plan can be granted if specific requirements can be met, including no environmental damage, no logging of stream beds, and no construction of roads.

Private ownership accounts for 72 percent of Sonoma County's commercial forest land and 92 percent of the raw timber growth. About 17,783,000 board feet of redwood and Douglas fir valued at 2.23 million dollars harvested in 1984. Rural residential development has encroached into the county's forest harvesting areas and has made harvesting operations more difficult. Potential erosion from logging operations and access roads is a major concern as is reforestation of areas which have converted from commercial timber to hardwoods following logging operations.

In 1982, adoption of the California Timberland Productivity Act pre-empted local control over timber lands. The act requires local jurisdictions to adopt "Timberland Production Zones", rezone commercial timberlands to this zoning district and designate timberlands on the general plan diagrams. Jurisdiction over timber harvesting was given to the State Department of Forestry, although counties may request the imposition of more stringent "local" rules. Most of Sonoma County is in the Coast Forest District which stipulates the regulations governing the timber harvest plans that must be filed for all commercial harvesting. Approximately 78,000 acres in the county have been zoned in the "Timber Preserve" District.

Directive: The Resource Conservation Element shall establish policies that will promote and encourage the conservation and proper management of timberland resources so that they will be available for long-term productive use.

Goal RC-4: It is a goal of the County of Sonoma to preserve, maintain, and restore forestry resources for their economic, conservation, recreation, and open space values.

Objective RC-4.1: It is the County's objective that areas with timber soils and timber stands suitable for commercial harvesting be identified and preserved for timber production and that incompatible uses not be permitted to occur in these areas.

Objective RC-4.2: It is the County's objective that the potential adverse environmental impacts of timber harvesting be minimized.

The County shall utilize the following policies related to forest and woodland resources:

RC-4a: The "Timberlands" land-use category shall be applied to all lands subject to Timberland Production Zoning and to contiguous parcels with soils or timber stands suitable for commercial harvesting.

RC-4b: The planning department shall review all timber harvest plans and submit comments to the California Department of Forestry as to the plan's compatibility with general plan policies, including but not limited to policies for open space, landmark tree protection, riparian corridor protection, scenic corridors, and resource conservation.

RC-4c: The County shall prepare a Timber Resource Management Plan and, if appropriate, petition the State of California for local rules governing timber harvesting.

5.0 VEGETATION AND WILDLIFE RESOURCES

5.1 POLICY TO CONSERVE IMPORTANT HABITATS AND BIOTIC COMMUNITIES

Introduction: Sonoma County has a large number of plant species which are grouped into eight major plant and biotic communities: 1) Tidal areas, such as mudflats, bays, and estuaries; 2) wetlands, including freshwater and saltwater marshes; 3) riparian woodlands; 4) coastal bluffs and dunes; 5) grasslands, including oak woodland and savannah; 6) brushlands, encompassing coastal scrub and chaparral; 7) coniferous forests, including bishop pine, grand fir, douglas fir, ponderosa pine, sargent cypress, and pygmy forests; and 8) woodlands, including northern oak, live oak, and foothill woodlands. Wetlands, coastal dunes, sargent cypress, and major riparian woodland are considered severely limited or threatened by man's activities. The County's plant communities include a number of endemics which have limited populations and are confined to a few localized areas.

These plant communities contribute to the quality and variety of the scenic and recreational opportunities of the county. Maintenance of vegetation aids watershed management by preventing excess runoff, stabilizing soils, and maintaining stream banks. These plant communities also provide a habitat for wildlife and are necessary for maintaining a healthy and diverse environment.

Vegetation in Sonoma County has been heavily disturbed over time. Forests have been logged, grasslands, shrublands and woodlands converted to urban or agricultural use, exotic species introduced, and natural fires prevented. All of these disturbances have tended to alter the qualities of Sonoma County's landscape. Wildlife has been pushed to marginal lands and certain species, such as the peregrin falcon, have become endangered.

Directive: The Resource Conservation Element shall establish policies that will promote and encourage maintenance of Sonoma County's diverse plant and animal communities.

Goal RC-5: It is a goal of Sonoma County to preserve important biotic resource areas.

Objective RC-5.1 It is the County's objective that any development activities on lands designated as encompassing unique biotic areas in the Open Space Element be compatible with protection of the habitat resource.

Objective RC-5.2 It is the County's objective that the land-use plan maps and text identify and protect areas with important biotic resources.

Objective RC-5.3 It is the County's objective to encourage the use of native plants in landscaping to reduce the risk of escape of exotic plant species into wildlife areas, except where the planning department determines that non-native plants are unlikely to reproduce.

In addition to the policies identified in Section 2.1.9 of the Land-use Element and Section 3.2 of the Open Space Element, the County shall utilize the following policies related to biotic resources:

RC-5a: Lands with important or unique biotic resources and riparian corridors are identified on the maps of the Open Space Element. Policies OS-4a to OS-4e establish policies for the protection of biotic resources, including a requirement that a biotic resources assessment be prepared and building setbacks established prior to the approval of any discretionary planning permits.

RC-5b: The "Resource Conservation" land-use designation represents the mapped expression of areas where it is the County's intent to preserve wildlife and vegetation habitats.

RC-5c: Native species or non-natives which are unlikely to reproduce shall be used to the extent possible in fulfilling landscaping requirements imposed as conditions of approval for discretionary planning permits; escaped exotics, such as pampas grass and scotch broom, shall not be used.

5.2 POLICY TO PROTECT RARE AND ENDANGERED SPECIES

Introduction: Plants and animals which are considered to be in danger of extinction due to the loss or alteration of habitat and the small population of remaining individuals are protected by state and federal law. These species are highly sensitive to any modification of their environment and would be adversely impacted by development. Rare and endangered plant and animal species frequently provide essential links in the natural ecosystem.

Directive: The Resource Conservation Element shall establish policies which will protect rare or endangered plant and animal species and their environments so as to maintain or enhance their populations and long-term survival potential.

Goal RC-6: It is a goal of Sonoma County to identify and protect rare and endangered species.

Objective RC-6.1 It is the County's objective to designate the general location of rare and endangered species on the Resource Conservation Maps (Figures RC-2a through 2i). Specific locations, based on the Natural Diversity Data Base and Surveys by the Native Plant Society, are more precisely mapped for planning and permit review purposes; these maps shall be maintained by the Planning Department.

Objective RC-6.2 It is the County's objective that any development which may be authorized by the land-use plan maps on lands containing rare and endangered species be accomplished in a manner which protects the resource.

The County shall utilize the following policies related to rare and endangered species:

RC-6a: The "Biotic Resources" data maps for the nine planning regions which indicate locations of known rare and endangered species, critical habitats, and unique natural areas, shall be maintained and updated by the Planning Department and shall be used in the environmental review process for discretionary planning permits to determine potential impacts on these resources.

RC-6b: Prior to the approval of a discretionary planning permit on a parcel containing a rare or endangered species, a biotic resources report shall be required to be prepared in order to evaluate potential impacts. The assessment shall be prepared at

the appropriate time of year for rare and endangered plant species and prior to County approval of any construction activities. Appropriate mitigation measures, including building envelopes, shall be developed in consultation with the planning department and responsible agencies. These measures must comply with the Endangered Species Act of 1973, and shall be incorporated into the project description. Adequate bonding shall be required to insure execution and satisfactory completion of the measures.

6.0 FISHERY RESOURCES

6.1 POLICY TO PROTECT AND CONSERVE MARINE FISHERY AND HARBOR RESOURCES

Introduction: Sonoma County contains marine and inland fisheries as well as a small but growing aquaculture industry. Bodega Harbor is the home of a major commercial fishing fleet. Existing facilities in 1986 include two privately owned berth installations, three boat launching ramps, commercial fish receiving piers, a federally maintained navigation channel and a county-owned 244-berth marina which opened in September, 1985. Commercial and sport fishing net salmon, crab, herring, halibut, shark and bottom fish. The abundance of sea life and coastal marine life off the Sonoma Coast and in Bodega Bay is directly related to the variety and quality of habitats. Like terrestrial wildlife, marine life is threatened by habitat loss or disruption, primarily on or near the highly productive shoreline.

Federal proposals to offer lease sales for oil exploration and drilling along the coast have a high potential to adversely affect sensitive sanctuary-preservation areas identified in the Local Coastal Plan. Streams and estuaries serve as nurseries and habitats for commercial fish species and are especially vulnerable to damage by an oil spill. Off-shore activities such as oil platforms, pipelines, and tankers could interfere with commercial fishing activities. Ocean outfall of treated sewage effluent, one of the alternative disposal methods being considered as of 1986 for the Regional Sewage Treatment Plant, could also adversely affect nursery areas and the commercial fishing industry.

Directive: To maintain an abundance of sea life and coastal marine life, the Resource Conservation Element shall establish policies to support habitat maintenance and shall strongly discourage habitat pollution.

Goal RC-7: It is a goal of the County of Sonoma to protect and conserve the quality of its off-shore ocean, marine and estuarine environments for their scenic, economic and environmental values.

Objective RC-7.1: It is the objective of the County to promote protection for the native marine and shoreline plant and animal communities along its 45-mile Pacific coastline and 10-mile San Pablo Bay shoreline.

Objective RC-7.2: It is the objective of this plan to discourage oil drilling off the Sonoma County Coast due to the potential for degradation of marine habitat and fishery resources.

Objective RC-7.3: It is the objective of the County to review any proposal for ocean-outfall of treated wastewater effluent for consistency with the Sonoma County Coastal Plan's policies on sanctuary and habitat protection and to determine the potential for marine fishery habitat degradation.

The County shall utilize the following policies related to marine fishery and harbor resources:

RC-7a: The County shall review and comment on any proposals for the sale of oil leases and/or oil drilling which would affect the Sonoma Coast or nearby marine habitats and fishery resources.

RC-7b: The County shall review any proposal for ocean outfall of sewage effluent and comment as to any potential adverse impacts on the fishing industry and marine resources.

RC-7c: The policies of the Sonoma County Coastal Plan shall be utilized to protect productive wetlands and estuaries and other coastal resources.

RC-7d: The County shall encourage the maintenance and provision of adequate harbor facilities at Bodega Bay to accommodate the needs of the local commercial fishing industry; such needs shall have priority over the accommodation of recreational vessels.

6.2 POLICY TO PROTECT AND CONSERVE FRESHWATER FISHERY RESOURCES

Introduction: Silver salmon and steelhead are the major catch from inland streams. The Russian River, Gualala River, Sonoma Creek and Salmon Creek provide the principal migratory routes for these fish and their tributaries provide spawning and nursery habitats. Runs of salmon and steelhead were being enhanced as of 1986 by the Warm Springs Hatchery, which produces 110,000 yearling coho salmon, 300,000 yearling steelhead and 1 million fingerling chinook.

Agriculture, logging, mining and land development activities all impact both the quantity and quality of the aquatic habitat. Siltation is the most significant pollutant of streams. Sediment takes away water, living space and habitat for fish. Destruction of riparian vegetation removes the protection of shade for water and destabilizes stream banks where the root structure provides cover for fish, a filter to trap sediment and a source of food.

Directive: The Resource Conservation Element shall establish policies which will promote maintenance of clear streams and adequate riparian vegetation to support spawning and nursery habitat areas and migratory routes for fish.

Goal RC-8: It is a goal of the County of Sonoma to balance competing agricultural, land development, and mining needs that impact streams with the environmental values of riparian vegetation and stream quality to encourage effective management of its freshwater fishery resources.

Objective RC-8.1: It is the County's objective to identify existing and potential new sources of sediment and erosion and minimize their impact on local water courses.

Objective RC-8.2: It is the County's objective to maintain riparian corridors along streams to provide protection for fish habitat.

Objective RC-8.3: It is the County's objective to encourage the preparation of a fishery management plan.

The County shall utilize the following policies related to freshwater fishery resources:

RC-8a: The County shall encourage educational programs dealing with stream bank stabilization practices.

RC-8b: In approving discretionary planning permits on parcels located adjacent to perennial and intermittent streams, the County shall require appropriate soil stabilization practices for unstable or eroded banks.

RC-8c: The County shall prepare a Biotic Resources Zoning District to establish regulations which will promote the maintenance of adequate riparian vegetation along major streams and rivers and their tributaries which are designated as "Protected Natural Riparian Corridors" on the Open Space Element maps.

RC-8d: The County shall establish a task force comprised of representatives from sports and commercial fishing organizations, stream restoration groups, the timber industry, the County Fish and Game Advisory Committee, and the State Department of Fish and Game or other appropriate organizations to develop a fishery management plan for consideration by the Board of Supervisors.

RC-8e: Public projects which affect streams shall be designed to minimize damage to the stream environment.

RC-8f: Flood control modifications to streams that have substantial existing natural areas shall utilize a design which avoids substantial alteration of the stream channel and its riparian vegetation.

6.3 AQUACULTURE

Introduction: Aquaculture in Sonoma County is a small industry with the potential for growth. Several domestic fish breeders in the County grow fresh water trout and bass to stock in ponds primarily for recreational use. These operations require a large amount of high quality cold water. A unique experimental aquaculture operation exists in Bodega Bay growing baby trout and salmon for the restaurant trade. This operation utilizes a European technology new to this country. If successful, this type of operation may be repeated along the Sonoma Coast where the clean cool salt water is the unique attribute for success. The aquaculture industry has differing siting requirements depending upon the species to be cultured and available technology. Proper siting is particularly important in coastal areas where sensitive habitats could be harmed, but the newness of the industry has resulted in lack of development guidelines and the potential for complicated and expensive permit processing.

Directive: The Resource Conservation Element shall establish policies which will promote the preparation of development guidelines for aquaculture facilities in order to encourage and permit location of this industry in the County, particularly along the Sonoma Coast.

Goal RC-9: It is a goal of the County of Sonoma to support and encourage commercial aquaculture in both marine and fresh water environments.

Objective RC-9.1: It is the County's objective that the needs of the aquaculture industry be evaluated and further development of the industry be encouraged.

Objective RC-9.2: It is the County's objective to encourage the development of guidelines for siting and developing aquaculture facilities which are responsive to varying requirements based on the species to be cultured and available technology.

The following policies related to aquaculture shall be utilized:

RC-9a: Aquaculture shall be a permissible use in the "Vineyard and Specialty Crop", "Grazing and Forage Crops and Livestock", "Diverse Agriculture", "Natural Resource Conservation" and "Timberlands" land-use categories.

- RC-9b:** Guidelines for the development of aquaculture facilities shall be developed to insure the protection of sensitive habitats and prime agricultural soils. Chapter 26 of the Sonoma County Code may be amended to include such guidelines.
- RC-9c:** Class I, II, and III soils in a "Vineyard and Specialty Crop" land-use designation shall not be converted to Aquaculture uses in excess of five acres unless the use is proposed as part of a reclamation plan for aggregate mining.

7.0 GEOTHERMAL RESOURCES POLICY

Introduction: The geothermal resources in Sonoma County consist of steam, hot water and heat that are concentrated below the earth's surface. The Geysers, the largest steam-dominated geothermal field development in the world, has been utilized for generation of electricity since 1960. The Geysers' Known Geothermal Resource Area (KGRA), located in northeastern Sonoma County, contains "primary" and "secondary" areas. Generation of electricity is permitted to occur in the "primary" resource area. The "secondary" area has been restricted to exploratory projects, and electricity generation is not permitted. Development and exploration have clarified some of the resource parameters but the total extent and productive life of the resource have not been definitively established. Approximately 1800 megawatts of electricity were being generated at The Geysers as of 1986, and the estimated potential capacity is 2000-3000 megawatts. Tax revenues and jobs generated by the Geysers geothermal development have significant beneficial impacts on the county's economy. Approximately 600 jobs have been created and as much as \$18,000,000 in annual tax revenues produced for the county. Development of geothermal power facilities at the Geysers is regulated and monitored by several agencies including the California Energy Commission and the California Division of Oil and Gas. County jurisdiction over the siting of power plants and transmission lines has been largely pre-empted by the state.

Geothermal activities have the potential to conflict with human habitation and to adversely affect biological resources due to land disturbance, noise, odor and gaseous emissions. Potential environmental impacts are associated with air and water quality, noise, geology, traffic, socio-economics, services and biological resources.

Hot water geothermal resources are also evident in other areas of the county, including Dry Creek Valley, Alexander Valley and Sonoma Valley. The extent of the resource has not been fully explored. Hot water geothermal resources have the potential for uses which include space heating, food drying, aquaculture, greenhouses and other applications which utilize heat.

Directive: The Resource Conservation Element shall establish policies which will protect lands with geothermal resources from incompatible types of development and which will encourage and promote the conservation and management of the resource in a manner which will maintain its long-term productivity.

Goal RC-10: It is a goal of the County of Sonoma to provide for planned utilization and management of geothermal resources for various beneficial uses, including generation of electrical power, space heating, aquaculture, agriculture and others.

Objective RC-10.1: It is the County's objective that planned production focus on maximum long-term utilization of the geothermal resource and on the mitigation of adverse environmental impacts.

Objective RC-10.2: It is the County's objective that geothermal power generation occur only on lands within the "primary" KGRA.

Objective RC-10.3: It is the County's objective to minimize land-use conflicts with geothermal uses within the "primary" KGRA.

Objective RC-10.4: It is the County's objective to encourage exploration of the extent and potential utilization of hot water geothermal resources.

The County shall utilize the following policies with regard to geothermal resources:

RC-10a: The County shall prepare a geothermal resources management plan to provide a consistent, comprehensive framework for evaluating and monitoring environmental impacts of geothermal development, establishing detailed policies and defining standards for steam and hot water geothermal resource development.

RC-10b: Lands within the "primary" KGRA shall be designated as "Geothermal Resources" on the land-use plan map.

RC-10c: The use of hot water geothermal resources shall be permissible in all land-use designations. These geothermal uses must demonstrate compatibility with other surrounding land uses through review at the project level.

RC-10d: Any property not currently designated as "Geothermal Resource" on the land-use map or designated as geothermal in the geothermal management plan shall be required to apply for an amendment to the "Geothermal" land-use designation prior to development of any power generation facilities. Approval of any amendment for this purpose shall conform to the following criteria:

- 1) The development will not adversely impact agricultural lands or other land-uses.
- 2) The natural resources of the area, including watersheds and habitats, rare and endangered species, and scenic resources, can be protected.
- 3) Adequate public services, including roads, will be available.

8.0 POLICY FOR CONSERVATION AND MANAGEMENT OF MINERAL RESOURCES

Introduction: Various minerals, including chromite, diatomite, quicksilver, and magnesite, have been extracted in Sonoma County during the past century. At the present time aggregate products, including sand and gravel and crushed stone are the dominant commercial materials. In 1984, 5.3 million tons of aggregate were mined in Sonoma County and approximately 75 to 112 million tons are projected to be needed over the next 20 years. About 600 jobs within the county are related to aggregate resources and about 80 percent of the production is used for construction projects within the county. The environmental impacts of mineral exploration, mining, processing and transportation activities include noise, dust, truck traffic, erosion, and siltation. These effects may create conflicts with nearby residential, agricultural and recreational uses and impact fishery resources. However, the most significant issue pertains to the loss of agricultural land as a consequence of mining uses.

In 1975, the state legislature enacted the Surface Mining and Reclamation Act, establishing state policy for the regulation of surface mining operations. The State Geologist is directed to "classify", or inventory, mineral lands throughout the state, and may "designate" certain mineral bearing areas as being of regional or statewide significance. Pursuant to Section 2762 of the act, local agencies are required to adopt mineral management policies which:

- "1) recognize mineral information classified by the State and transmitted by the Board;
- 2) assist in the management of land use which affect areas of statewide and regional significance; and
- 3) emphasize the conservation and development of identified mineral deposits."

Sonoma County adopted the Aggregate Resources Management Plan, a specific plan for obtaining future supplies of aggregate products, in November, 1980. This plan serves as the state-mandated mineral management policy for Sonoma County. During the process of adoption of the plan, the County considered the aggregate resources subsequently classified as MRZ-2 by the State Geologist and transmitted by the Board in compliance with the Act in February, 1985. The land use policies contained in the General Plan have been formulated with full consideration of the classification information transmitted by the State (RC Special Report #146, Part III incorporated by reference herein). In so doing, Sonoma County has considered the importance of its aggregate resources to the regional market as a whole and not just to the county.

Directive: The Resource Conservation Element shall establish policies which will provide for the conservation and managed production of mineral resources, while balancing their extraction with competing agricultural, residential, and recreational needs.

Goal RC-11: It is a goal of the County of Sonoma to provide for adequate production of aggregates which will meet local needs and contribute its share of demand in the North Bay production-consumption region; additionally, it is the County's goal that aggregate resources be managed so as to avoid needless depletion of the resource and to ensure that extraction is accomplished in a manner which results in the fewest environmental impacts.

Objective RC-11.1: It is the County's objective that the Aggregate Resources Management Plan establish priority areas for aggregate production.

Objective RC-11.2: It is the objective of the County that the Aggregate Resources Management Plan establish detailed policies, procedures, and standards for mineral extraction.

Objective RC-11.3: It is the objective of the County to minimize the environmental effects of mineral extraction and foster reclamation of mineral lands.

The County shall utilize the following policies related to mineral and aggregate resources:

RC-11a: Lands designated as hardrock, terrace, and instream mining operations in the Aggregate Resources Management Plan shall be designated with a "Mineral Resource" overlay on the land-use plan maps.

RC-11b: All applications for discretionary permits for aggregate mining and reclamation shall be subject to the policies and requirements of the Aggregate Resources Management Plan and the Surface Mining Ordinance.

RC-11c: The following factors shall be considered when approving extraction permits: preservation of topsoil, natural vegetation, wildlife habitats, and fisheries; provisions for visual, noise, and erosion control; roadway conditions and capacities; restoration plans and bonding; air quality; energy consumption; engineering and geological surveys; inventories of sand and gravel and their replenishment; and control of drainage and desilting basins.

RC-11d: Quarry, instream, and terrace sites designated in the Aggregate Resources Management Plan are priority sites for extraction of aggregate resources. No other quarry and terrace sites shall be designated without first amending the general plan and the Aggregate Resources Management Plan. Requests shall be reviewed for conformance with the policies of the general plan and the ARM plan and for potential environmental impacts and land-use conflicts, particularly on agriculture.

RC-11e: Development proposals on sites designated with a "Mineral Resources" land-use designation shall be reviewed to insure that the proposed use is compatible with future mineral extraction.

9.0 ENERGY RESOURCES POLICY

Introduction: Sonoma County has potential energy resources which have not yet been fully utilized. Initial natural gas exploration has taken place east of Petaluma, between Sebastopol and Cotati, and along the Laguna de Santa Rosa. Production has been moderate and the extent of the resource is unknown. Potential development conflicts with residential uses include noise, visual, and safety concerns.

The county's mild climate makes solar heating feasible if structures are properly sited in developments and have their solar access protected. Wind energy is a new resource just being evaluated in the county. Initial studies indicate that the Sonoma Coastline and Petaluma Wind Gap have a mean annual wind speed of 11-14 miles per hour, which is sufficient for electrical generation. Land-use conflicts arise from safety concerns created by problems with blade throw and tower collapse, operational noise, and aesthetic considerations. Towers, roads, and transmission lines associated with development of wind resources could adversely affect coastal and mountain scenic resources.

The federal government has proposed the leasing of oil tracts off the Pacific Coast at Bodega Bay. Offshore oil drilling could be environmentally damaging to fishery, wildlife, and visual resources and could adversely affect the fishing and tourist industries. While nationwide energy needs are recognized, the county currently contributes to nationwide energy supplies through geothermal power stations at The Geysers and other energy resources.

There is potential in Sonoma County for biomass and municipal waste conversion to energy projects. Sources of biomass include manure from dairy operations and slash from timber harvesting, while the central landfill is the source of municipal waste. As of 1986 the County's Department of Public Works was evaluating the potential for energy production at the County's central landfill. In 1986, a model project was underway to convert manure into energy and fertilizer. These activities are compatible with adjacent agricultural operations.

Directive: The Resource Conservation Element shall establish policies that will balance conservation and development of alternative energy resources with protection of visual, biotic, and other environmental resources.

Goal RC-12: It is a goal of Sonoma County to provide for the utilization and development of those alternative energy sources which are compatible with maintenance of environmental quality, including visual and biotic resources.

Objective RC-12.1: It is the County's objective to prepare guidelines for development, management and/or conservation of various potential energy sources, including natural gas, solar, biomass, and wind resources.

Objective RC-12.2: It is the objective of the County that off-shore oil drilling not occur along Sonoma County's Pacific Coastline.

The County shall utilize the following policies related to energy resources:

RC-12a: The use permit procedure shall be utilized to review proposed wells for natural gas exploration and development for compatibility with adjacent uses and to assess potential noise, visual, safety, and other environmental impacts.

RC-12b: Development of natural gas wells shall be prohibited within urban service areas.

RC-12c: The planning department shall prepare guidelines for solar design to be included in the proposed revision to the subdivision ordinance for consideration by the Board of Supervisors.

RC-12d: Provisions for solar access shall be included in a design review manual for the consideration of the Board of Supervisors.

RC-12e: An energy resources plan may be prepared to evaluate priority areas for development and provide design and visual standards.

RC-12f: Proposals and EIR's related to any sale of oil leases and any subsequent off-shore drilling, in the event such leases are sold, shall be reviewed by the planning department for their potential impacts on visual and biotic resources and the fishing and tourist industries; reports or comments to the lead agency shall be submitted to the Board of Supervisors for approval.

RC-12g: The County shall advise state and federal officials of potential detrimental effects of off-shore drilling on visual and biotic resources and the fishing and tourist industries.

- RC-12h:** The use permit procedure shall be utilized to review biomass energy projects for compatibility with adjacent uses.
- RC-12i:** Any wind, biomass, or gas well development shall be prohibited in designated scenic corridors, scenic landscape units, or in the coastal area unless such development will be visually screened so that it would not be visible from any public roadway. These developments are not permitted in community separator open space areas.
- RC-12j:** The County shall review all transmission line proposals for conformity with Open Space policies and request that such facilities be located outside of community separators, scenic corridors, scenic landscape units, and unique biotic areas; preference shall be given to use of existing utility corridors over development of additional lines.
- RC-12k:** Undergrounding of transmission lines may be required in designated open space areas and in selected community areas.

10.0 POLICY FOR AIR RESOURCES QUALITY

Introduction: Sonoma County residents enjoy the cleanest air in the Bay Area. Nonetheless, Sonoma County's air quality is influenced, as is most of coastal California, by persistent temperature inversion caused by cool marine air near the ground. The temperature inversion tends to trap and concentrate pollutants near the ground. This "cap" effect makes inland valleys particularly susceptible to pollution problems while the west to northwest winds bring clean air to the coast and areas affected by wind gaps.

Air pollutants, which can adversely affect public health and welfare, take the form of gases or of particulate matter. Photochemical smog, the best known form of air pollution, is the result of a chemical reaction between nitrogen dioxide and reactive hydrocarbons; the automobile is the most common source of these gases. In Sonoma County, particulates come from several industrial and agricultural sources and from many day-to-day activities. Particulate matter may be seen as dust on the horizon, smoke over an agricultural site, or recurring and bothersome household dust.

State and federal air-quality standards have been established as the result of scientific investigations made to determine air-pollution levels that will be harmful to humans, plants, and materials. The evidence supports the conclusion that if the primary air-quality standards are met, eye and throat irritation and more serious health effects of air pollution would not appear, even among the most susceptible people. More stringent secondary standards are designed to protect property and aesthetic qualities. The federal Clean Air Act and the state Air Quality Act cite air-quality standards, which define the levels of air pollution that must not be exceeded if the public health and welfare is to be safeguarded. The federal and state acts require the attainment of these clean-air standards.

Special-purpose agencies have been established to implement and enforce the provisions of the clean-air acts. In California, the Air Resources Board (ARB) is the agency that administers air-pollution legislation. The ARB had delineated eleven air basins, called "districts," each of which has meteorologic and geographic conditions common to its area; efforts to meet the clean-air goals can be effectively coordinated within each basin. Sonoma County is divided so that it falls within two air-pollution control districts. The intent of this division was to distinguish the natural-resource-based industrial air-pollution sources of northern Sonoma County from the urban and industrial sources of the southern part of the county. The areas of jurisdiction of the Bay Area Air Quality Management District and the Northern Sonoma County Air Quality Management district are shown in Figure RC-1.

Sources of air pollution in Sonoma County are both stationary and mobile. Mobile sources, predominantly motor vehicles, produce most of the air pollutants in the county. Air pollution from mobile sources is controlled by the state through exhaust emissions standards, but can be influenced significantly by County policies staging growth in an orderly manner in urban service areas; balancing growth and improvements to the transportation system; reducing long-distance commuting; increasing use of public transit, car pools, van pools and other alternative transportation modes; and preserving open, low-density lands outside of urban service areas.

The geysers power plants are the largest stationary pollutant source. Other stationary source emitters include quarry operations, industrial and agricultural activities and lumber mills. Residential wood stoves have been cited as a significant new contributor to airborne particulate levels in the Northern Sonoma County Air Pollution Control District.

Air pollution control policy is intended to preserve clean air, but must be balanced with competing interests for production efficiency, energy costs and ease of transportation. Issues involve determination of the desired air quality standards, and the appropriate mechanisms and mitigations that should be required by the County to maintain those standards.

Directive: In order to help protect residents from chronic and transitory health problems and to avoid damage to crops, plants and property, the Resource Conservation Element shall establish policies which will preserve and maintain good air quality. Policies to protect air quality must also balance the need for efficient and economical energy.

Goal: RC-13: It is a goal of the County of Sonoma to provide for an air quality standard that will protect human health and preclude crop, plant and property damage.

Objective RC-13.1: It is the objective of the County to preserve and maintain the existing air quality in the County.

Objective RC-13.2: It is the objective of the County to minimize direct and indirect emissions of air contaminants.

Objective RC-13.3: It is the objective of the County to encourage reduction in motor vehicle use and resulting emissions of air pollutants.

The County shall utilize the following policies related to the quality of atmosphere resources:

RC-13a: Development projects shall be required to have a design which conserves air quality and minimizes direct and indirect emissions. Direct emissions shall be reduced through energy conserving construction techniques which decrease the need for space heating.

RC-13b: Transportation modes which minimize single passenger motor vehicle use and its resulting emissions shall be encouraged. Alternative modes to be encouraged include public transit, ridesharing and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles and walking.

RC-13c: Guidance of the local Air Quality Management Districts shall be sought in the review of permits for major and/or significant development projects prior to their consideration by the appropriate County decision-making body.

RC-13d: Proposed changes in land-use designation on the Land-use Plan Maps shall be reviewed for potential deterioration of air quality and shall not be approved unless adequate mitigations are adopted.

RC-13e: In areas where topography, climate and density might create a propensity for air pollution from emissions from woodburning stoves, the County shall cooperate with the Air Pollution Control district to monitor air pollution and enforce appropriate mitigations.

RC-13f: In its geothermal planning, the County shall encourage: 1) adoption of standards to protect air quality, 2) development of new technology to reduce air pollution, and 3) maintenance of programs to retrofit existing facilities.

11.0 RESOURCE CONSERVATION IMPLEMENTATION PROGRAMS: 1987-1992

Resource Conservation Program 1: Erosion and Sediment Control Ordinance

Type of Program: General police power regulation

Responsible Agencies: Building Inspection and Planning Departments,
assisted by Public Works Department and Sonoma
County Water Agency

Timeframe: Within 2 years of adoption of the revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: RC-2g

Program Description: An ordinance shall be prepared for consideration by the Board of Supervisors which determines activities which contribute to erosion and sedimentation and outlines appropriate standards, regulations, and enforcement measures.

Resource Conservation Program 2: Resource Management Plans

Type of Program: General policy documents and potential ordinance amendments

Responsible Agency: Planning Department and various agencies

Timeframe: All plans completed and presented to Board of Supervisors within 5 years of adoption of revised general plan

Budgetary Impact: Possible increase in departmental budget allocation; California Energy Commission grant

Policy Reference: RC-4c, Rc-9a, RC-11e, RC-8d

Program Description: Prepare resource management plans for timber, fisheries, geothermal and energy resources. Said plans to specifically identify: primary and secondary resource areas, potential land-use conflicts and environmental impacts in development of the resource, mitigation measures, development standards, and restoration and monitoring programs for resource renewal. The Board of Supervisors may appoint committees comprised of representatives from appropriate agencies, organizations and industries to assist in development of resource management plans.

Index by Planning Region to Rare and Endangered Species

SONOMA COAST / GUALALA BASIN

- | | |
|---|---|
| a. <i>Agrostis blasdalei</i> , v. <i>blasdalei</i>
(Blasdale's bent grass) | i. <i>Lupinus tidestromii</i> , v. <i>layneae</i>
(Pt. Reyes lupine) |
| b. <i>Agrostis clivicola</i> , v. <i>punta-reyesensis</i>
(Pt. Reyes bent grass) | j. <i>Pandion haliaetus</i>
(Osprey) |
| c. <i>Alopecurus aequalis</i> , v. <i>sonomensis</i>
(Sonoma alopecurus) | k. <i>Streptanthus glandulosus hoffmanni</i>
(Hoffman's jewelflower) |
| d. <i>Campanula californica</i>
(swamp harebell) | l. <i>Strix occidentalis</i>
(Spotted Owl) |
| e. <i>Chorizanthe valida</i>
(Sonoma chorizanthe) | m. <i>Syncaris pacifica</i>
(Calif. fresh water shrimp) |
| f. <i>Cordylanthus maritimus</i> , ssp. <i>palustris</i>
(Pt. Reyes bird's-beak) | n. <i>Erigeron supplex</i>
(Supple Daisy) |
| g. <i>Delphinium luteum</i>
(yellow larkspur) | o. <i>Pedideridia gairdneri</i> , ssp.
<i>gairdneri</i> (Gairdner's yampa) |
| h. <i>Eriogonum nervuillosum</i>
(Snow Mtn. buckwheat) | |

CLOVERDALE AND ENVIRONS

- | | |
|--|--|
| a. <i>Arctostaphylos stanfordiana</i> , v. <i>repens</i>
(Rincon Ridge manzanita) | j. <i>Lilium rubescens</i>
(Redwood lily-Chaparral lily) |
| b. <i>Dicanthelium lanuginosum</i> , v. <i>thermale</i>
(The Geysers' panicum) | k. <i>Fritillaria purdyi</i>
(Purdy's fritillary) |
| c. <i>Dendroica petechia brewsteri</i>
(California yellow warbler) | l. <i>Ceanothus divergens</i>
(Calistoga ceanothus) |
| d. <i>Icteria virens</i>
(Yellow-breasted Chat) | m. <i>Lupinus sericatus</i>
(Cobb Mtn. lupine) |
| e. <i>Tracyina rostrata</i>
(beaked tracyina) | n. <i>Orobanche valida</i> , ssp. <i>howellii</i>
(Howell's broomrape) |
| f. <i>Sidalcea oregana</i> ssp. <i>valida</i>
(Kenwood marsh checkermallow) | o. <i>Penstemon newberryi</i> , ssp. <i>sonomensis</i>
(no common name) |
| g. <i>Streptanthus brachiatus</i>
(Socrates Mine jewelflower) | p. <i>Arctostaphylos hispidula</i>
(Howell manzanita) |
| h. <i>Calamagrostis ophitidis</i>
(serpentine reed grass) | q. <i>Erigonum nervuillosum</i>
(Snow Mtn. buckwheat) |
| i. <i>Lomatium repostum</i>
(Napa lomatium) | |

HEALDSBURG AND ENVIRONS

- | | |
|---|--|
| a. <i>Ceanothus confusus</i>
(Rincon Ridge ceanothus) | d. <i>Icteria virens</i>
(Yellow-breasted Chat) |
| b. <i>Dendroica petechia brewsteri</i>
(California yellow warbler) | e. <i>Lasthenia burkei</i>
(Burke's goldfields) |
| c. <i>Elanus caeruleus</i>
(Black-shouldered Kite) | f. <i>Panion haliaetus</i>
(Osprey) |

(continued)

Index by Planning Region to Rare and Endangered Species - (continued)

ALDSBURG AND ENVIRONS (Cont'd)

- | | |
|---|--|
| Strix occidentalis
(Spotted Owl) | k. Popogyne douglasii, ssp parviflora
(Douglas' pogogyne) |
| Stylocline amphibola
(Mt. Diablo cottonweed) | l. Calystegia collina oxyphylla
(no common name) |
| Cypripedium montanum
(Mountain lady's slipper) | m. Lilium rubescens
(Redwood lily-Chaparral lily) |
| Astragalus breweri
(Brewer's milkvetch) | |

SSIAN RIVER AREA

- | | |
|--|---|
| Alopecurus aequalis, v. sonomensis
(Sonoma alopecurus) | h. Strix occidentalis
(Spotted Owl) |
| Arctostaphylos bakeri
(Baker's manzanita) | i. Syncaris pacifica
(Calif. fresh water shrimp) |
| Arctostaphylos densiflora
(Vine Hill manzanita) | j. Limnanthes vinculans
(Cunningham marsh meadowfoam) |
| Ceanothus confusus
(Rincon Ridge ceanothus) | k. Pedideridia gairdneri, ssp gairdneri
(Gairdner's yampa) |
| Clarkia imbricata
(Vine Hill clarkia) | l. Hemizonia multicaulis, ssp vernalis
(Tiburon tarplant) |
| Cordylanthus tenuis, ssp capillaris
(Pennell's Bird's-beak) | m. Calamagrostis ophitidus
(serpentine reed grass) |
| Pandion haliaetus
(Osprey) | n. Lilium Rubescens
(Redwood lily) |

NTA ROSA AND ENVIRONS

- | | |
|--|---|
| Astragalus clarianus
(Clars Hunt's milk-vetch) | i. Navarretia plientha
(Many flowered navarretia) |
| Arctostaphylos stanfordiana, v. repens
(Rincon Ridge manzanita) | j. Downingia humilis
(Dwart downingia) |
| Blennosperma bakeri
(Baker's blennosperma) | k. Trifolium amoenum
(Showy indian clover) |
| Ceanothus confusus
(Rincon Ridge ceanothus) | l. Pleuropogon hooverianus
(Hoover's semaphore grass) |
| Ceanothus sonomensis
(Sonoma ceanothus) | m. Lilium rubescens
(Redwood lily, Chaparral lily) |
| Navarretia pliantha
(many-flowered navarretia) | n. Ceanothus divergens
(Calistoga ceanothus) |
| Lasthenia burkei
(Burke's goldfields) | o. Lomatium repostum
(Napa lomatium) |
| Limnanthes vinculans
(Cunningham Marsh meadow-foam) | p. Pogogyne douglasii, ssp. parviflora
(Douglas' pogogyne) |

(continued)

Index by Planning Region to Rare and Endangered Species - (continued)

SANTA ROSA AND ENVIRONS (Cont'd)

- | | |
|--|--|
| q. <i>Madia nutans</i>
(Nodding madia) | u. <i>Antirrhinum virga</i>
(Tall snapdragon) |
| r. <i>Perideridia gairdneri</i> , ssp. <i>gairdneri</i>
(Gairdner's yampa) | v. <i>Sidalcea orgegana</i> , ssp. <i>valida</i>
(Kenwood Marsh checker mallow) |
| s. <i>Streptanthus tortuosus</i> ,
v. <i>suffrutescens</i> (no common name) | w. <i>Lupinus sericatus</i>
(Cobb Mtn. lupine) |
| t. <i>Ranunculus lobbii</i>
(Lobb's aquatic buttercup) | x. <i>Alopecurus aequalis</i> , v. <i>Sonomensis</i>
(Sonoma Alopecurus) |

SEBASTOPOL AND ENVIRONS

- | | |
|---|---|
| a. <i>Alopecurus aequalis</i> , v. <i>sonomensis</i>
(Sonoma alopecurus) | i. <i>Lilium pitkinense</i>
(Pitkin lily) |
| b. <i>Arctostaphylos densiflora</i>
(Vine Hill manzanita) | j. <i>Rhynchospora californica</i>
(California beaked-rush) |
| c. <i>Campanula californica</i>
(Swamp harebell) | k. <i>Trifolium amoenum</i>
(Showy Indian clover) |
| d. <i>Carex albida</i>
(White sedge) | l. <i>Potentilla hickmanii</i> , v. <i>uliginosa</i>
(Cunningham Marsh cinquefoil) |
| e. <i>Delphinium luteum</i>
(yellow larkspur) | m. <i>Arctostaphylos bakeri</i>
(Baker's manzanita) |
| f. <i>Lasthenia burkei</i>
(Burke's goldfields) | n. <i>Hemizonia multicaulis</i> , ssp. <i>vernalis</i>
(Tiburon tarplant) |
| g. <i>Cordylanthus tenius</i> , ssp. <i>capillaris</i>
(Pennell's bird's-beak) | o. <i>Synceris pacifica</i>
(Calif. freshwater shrimp) |
| h. <i>Limnanthes vinculans</i>
(Cunningham Marsh meadowfoam) | p. <i>Blennosperma bakeri</i>
(Baker's blennosperma) |

ROHNERT PARK - COTATI AND ENVIRONS

- | | |
|---|--|
| a. <i>Caecidotea tomslensis</i>
(Tomales isopod) | e. <i>Trifolium amoenum</i>
(Showy Indian clover) |
| b. <i>Coccyzus americanus</i>
(Calif. yellow-billed cuckoo) | f. <i>Limnanthes vinculans</i>
(Cunningham Marsh meadowfoam) |
| c. <i>Legenera limosa</i>
(Legenere) | g. <i>Popogyne douglasii</i> , ssp. <i>parviflora</i>
(Douglas' popogyne) |
| d. <i>Pleuropogon hooverianus</i>
(Hoover's semaphore grass) | h. <i>Lasthenia Burkei</i>
(Burke's Goldfields) |

(continued)

TALUMA AND ENVIRONS

- | | |
|--|---|
| Blennosperma bakeri
(Baker's blennosperma) | f. Reithrodontomys raviventris
(Salt Marsh or Red-bellied Harvest Mouse) |
| Cordylanthus mollis, ssp. mollis
(Soft bird's-beak) | g. Trifolium amoenum
(Showy Indian clover) |
| Delphinium luteum
(yellow larkspur) | h. Limnanthes vinculans
(Cunningham Marsh meadowfoam) |
| Laterallus jamaicensis coturniculus
(California Black Rail) | i. Plagiobothrys mollis, v. vestitus
(Petaluma popcornflower) |
| Rallus longirostris obsoletus
(California Clapper Rail) | |

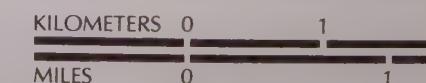
OMA VALLEY

- | | |
|--|---|
| Blennosperma bakeri
(Baker's blennosperma) | g. Reithrodontomys raviventris
(Salt Marsh or Red-bellied Harvest Mouse) |
| Caecedote tomalensis
(Tomaes isopod) | h. Synceris pacifica
(Calif. freshwater shrimp) |
| Ceanothus sonomensis
(Sonoma ceanothus) | i. Lomatium Ripostum
(Napa lomatium) |
| Downingia humilis
(Dwarf downingia) | j. Lupinus sericatus
(Cobb Mtn. lupine) |
| Laterallus jamaicensis coturniculus
(Calif. (or Farallon) Black Rail) | k. Grindelia humilis
(marsh gumplant) |
| Rallus longirostris obsoletus
(California Clapper Rail) | l. Lilium rubescens
(Redwood lily or chaparral lily) |
| | m. Antirrhinum Virga
(Tall Snapdragon) |

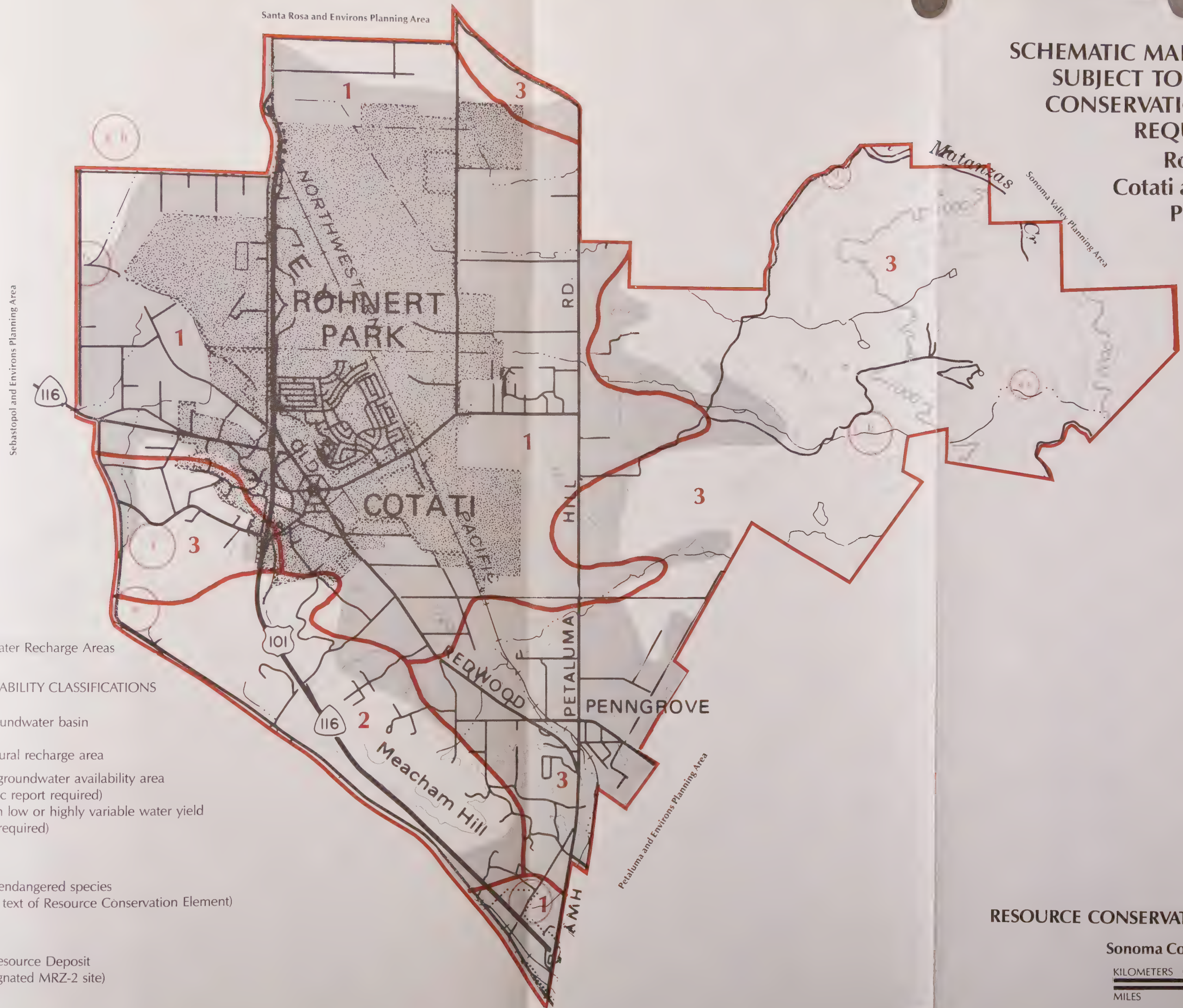
ITRAES



Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO RESOURCE CONSERVATION POLICY REQUIREMENTS Rohnert Park- Cotati and Environs Planning Area



WATER RESOURCES

 Groundwater Recharge Areas

GROUNDWATER AVAILABILITY CLASSIFICATIONS

- 1** Major groundwater basin
- 2** Major natural recharge area
- 3** Marginal groundwater availability area (hydrologic report required)
- 4** Areas with low or highly variable water yield (test well required)

BIOTIC RESOURCES

 Rare and endangered species (see list in text of Resource Conservation Element)

MINERAL RESOURCES

 Mineral Resource Deposit (state-designated MRZ-2 site)

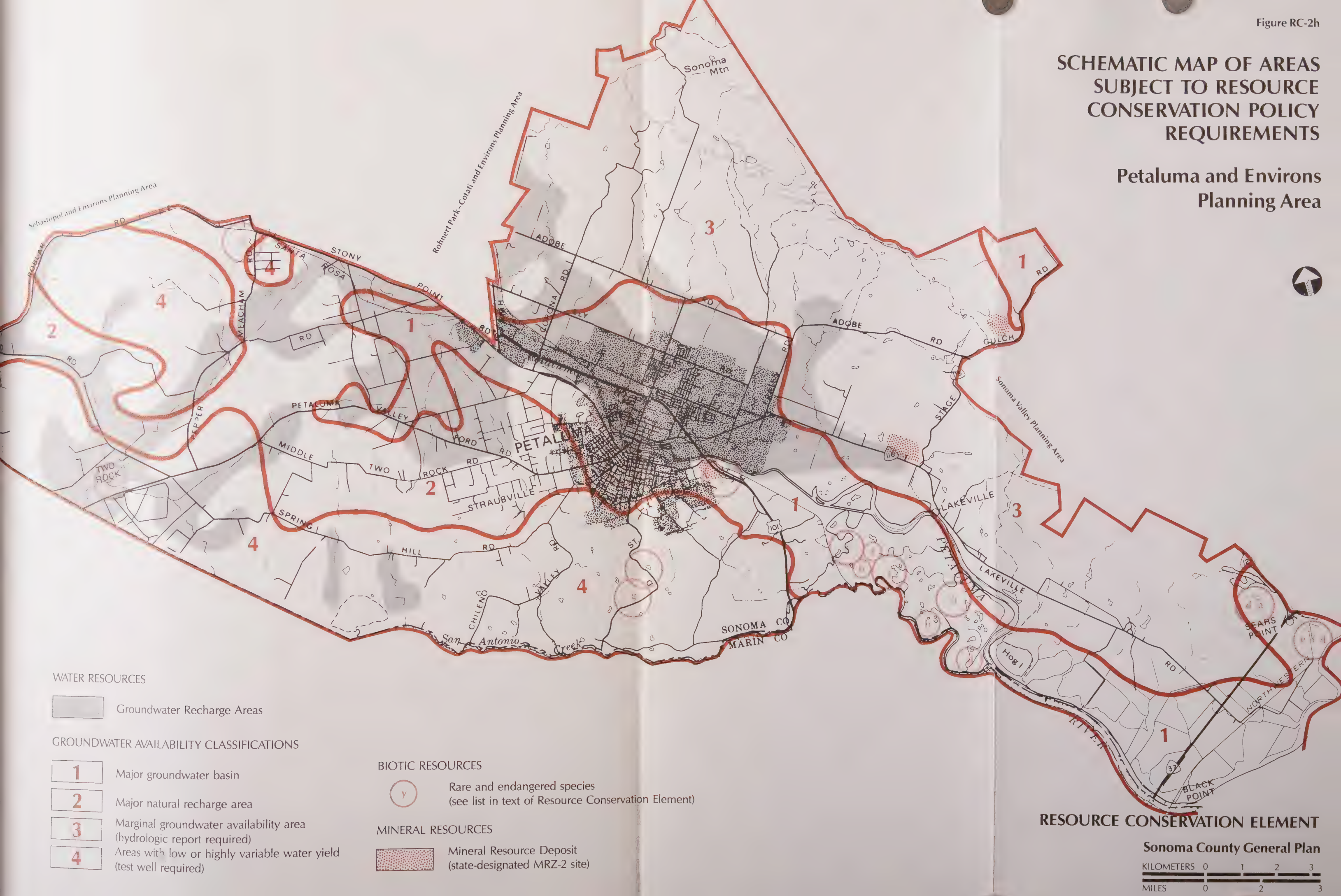
RESOURCE CONSERVATION ELEMENT

Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO RESOURCE CONSERVATION POLICY REQUIREMENTS

Petaluma and Environs Planning Area



WATER RESOURCES

Groundwater Recharge Areas

GROUNDWATER AVAILABILITY CLASSIFICATIONS

- 1** Major groundwater basin
- 2** Major natural recharge area
- 3** Marginal groundwater availability area (hydrologic report required)
- 4** Areas with low or highly variable water yield (test well required)

BIOTIC RESOURCES

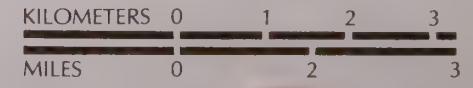
Rare and endangered species (see list in text of Resource Conservation Element)

MINERAL RESOURCES

Mineral Resource Deposit (state-designated MRZ-2 site)

RESOURCE CONSERVATION ELEMENT

Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO RESOURCE CONSERVATION POLICY REQUIREMENTS





Sonoma Valley Planning Area



WATER RESOURCES

 Groundwater Recharge Areas

GROUNDWATER AVAILABILITY CLASSIFICATIONS

-  Major groundwater basin
-  Major natural recharge area
-  Marginal groundwater availability area (hydrologic report required)
-  Areas with low or highly variable water yield (test well required)

BIOTIC RESOURCES

Rare and endangered species
(see list in text of Resource Conservation Element)

MINERAL RESOURCES

 Mineral Resource Deposit
(state-designated MRZ-2 site)

RESOURCE CONSERVATION ELEMENT

Sonoma County General Plan

KILOMETERS 0 1 2 3
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47393
CSZ SW
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ENV1

PUBLIC SAFETY ELEMENT

PUBLIC HEARING DRAFT



PUBLIC HEARING DRAFT

**Sonoma County General Plan
PUBLIC SAFETY ELEMENT**

**Prepared for Public Hearings by the
Sonoma County Planning Commission**

December 18, 1986

**Sonoma County Planning Department
575 Administration Drive
Santa Rosa, California 95401**

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Note: Figures PS-2a through PS-2i are found at the end of the document inside the back cover.

1.0 INTRODUCTION

1.1 AUTHORITY AND PURPOSE

State legislation adopted in 1971 added the Safety and Seismic Safety Elements to the list of mandatory elements for local general plans. In order to eliminate overlap between the two elements, the requirements were integrated into one element by statutes adopted in 1984. The Government Code now requires the Safety Element to address the protection of the community from any unreasonable risks associated with the following hazards:

Seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence and other geologic hazards known to the legislative body; flooding; and wildland and urban fires.

Required contents also include 1) mapping of known seismic and geologic hazards and 2) general assessments of evacuation routes, water supply needs, road widths, clearances around structures, and other items related to potential catastrophic events. Upon adoption, local safety elements are required to be transmitted to the State Division of Mines and Geology.

The purpose of the Safety Element of the Sonoma County General Plan is to establish policies which will minimize the potential of property damage and human injury by reducing the exposure of persons and property to natural hazards. The underlying assumption is that the potential losses can be reduced if the probability and effects of catastrophic events related to these hazards are considered in local plans and programs. The information and analysis presented herein are followed by a set of protective policies and actions based on determinations of the acceptable levels of exposure to risks for each type of hazard. These evaluations necessarily involve judgements based on such factors as the nature of the hazard; the likely frequency of damage-inducing events; the potential number of persons exposed to the risk; the amounts of potential losses due to injuries, deaths, and damage to property; and others. Exposure to hazards with a potential for loss of life is generally less acceptable than exposure to those primarily affecting property.

Exposure to the hazards addressed in the Element may or may not be voluntarily undertaken by individuals. Voluntarily taken risks, however, are not necessarily acceptable from a public point of view, because property owners and residents frequently have expectations that public actions, such as building and zoning regulations or floodplain management, will provide a significant risk-reduction. For the hazards addressed in the element, various thresholds of exposure to risks have been determined to be unacceptable; this determination may be expressed as limitations on the types and intensities of land-uses that are permissible on lands subject to the various risk factors; as well as in the form of development standards for any uses that are allowed.

Most of the actions available to the County to avoid or reduce risks associated with environmental hazards impose some measure of restrictions on use of property. In imposing these restrictions, it is the General Plan's intent to protect the public health, safety, and welfare within the framework of the following postulates: 1) individuals should not be allowed to develop land in a manner which would impose risks on their neighbors or on the community at large; 2) future residents of subdivisions or other development should not be placed in jeopardy through a failure of the County to adequately assess potential physical risks when approving discretionary permits; and 3) a financial burden should not be imposed on the general taxpayer by allowing developments in hazardous areas which are likely to have unusually high costs for public services and for disaster relief.

1.2 RELATIONSHIP TO OTHER ELEMENTS

In order to fulfill the Government Code requirement that a general plan comprise an integrated and internally consistent statement of local government policies, the policies and measures expressed in this element have been formulated in coordination with the provisions of the various elements of the Sonoma County General Plan. The land-use plan maps and standards for density and building intensity reflect the assessment of natural hazards contained in the Safety Element. Where natural hazards are considered to be a significant constraint, the Land-use Element implements Safety Element objectives by limiting the types and intensities of land uses which are allowed so as to reduce the number of people and structures exposed to such risks. Although Section 65302(a) of the Government Code requires land-use elements to identify areas subject to flooding, this requirement is accomplished in the Safety Element of the Sonoma County General Plan.

Because of overlapping content requirements, the Safety Element has a direct correlation with to the Open Space Element. The Government Code requires the Open Space Element to address a category of open space called "open space for public health and safety" which includes all areas requiring special management because of natural hazards. Consequently, the policies and measures to limit development in areas subject to hazards are expressed in the Safety and Land-use Elements and incorporated by reference in the Open Space Element.

Areas subject to natural hazards may be unsuitable for residential development, thus limiting the locations of building sites which may be available to meet the housing needs identified in the Housing Element. Similarly, natural hazards may affect the location and design of the utilities and facilities addressed in the Public Facilities Element and the location and design of public roads considered in the Circulation and Transit Element. The directive, expressed in Government Code Section 65302(g), for safety elements

to include peakload water supply requirements and minimum road widths, as those relate to hazards, are addressed in the Public Facilities and Circulation and Transit Elements respectively, rather than herein. Finally, many of the agricultural uses discussed in the Agricultural Resources Element are considered to be appropriate uses of floodplains and other hazardous areas because such uses do not require many structures and are associated with low population densities. The organization of safety policies within the Sonoma County General Plan is illustrated in Figure PS-1.

1.3 SCOPE AND ORGANIZATION

The information, analysis and policies contained in this element are organized as four major sections which address 1) geologic hazards, 2) flood hazards, 3) fire hazards, and 4) emergency preparedness. Each of these sections begins with a description of the extent of the hazard and general assessment of the risks of damage in Sonoma County, with emphasis on the location and extent of areas subject to frequent or severe damage from natural events. The second part of each section reviews the general means which may be used in land-use planning and development decisions to protect the public property from the hazard. The final part of each section expresses the County's goals, objectives, policies and actions which are intended to protect the public from the effects of known natural hazards. The last section identifies several implementation measures which would necessitate separate actions following adoption of this plan.

2.0 PROTECTION FROM GEOLOGIC HAZARDS

2.1 GEOLOGIC HAZARDS IN SONOMA COUNTY

2.1.1 Seismic Hazards

Introduction: Accumulated pressures beneath the earth's surface can result in rapid movements of bedrock materials known as earthquakes. Because of the widespread physical damage which can result and the lack of advance warning, earthquakes are a major planning concern in land development. Earthquakes are most common along geologic faults, or planes of weakness and/or boundaries between different types of bedrock, and consist of sudden movement of blocks of the earth's crust along faults. Faults located within Sonoma County comprise part of the San Andreas fault system which extends along most of the length of California and represents the juncture between two major blocks or "plates" of the earth's crust. Horizontal displacement along the North American and Pacific plates has been estimated at two inches per year and has resulted in a total displacement of more than 200 miles in the past 25 million years. The Pacific plate, on which Bodega Head is located, is slowly drifting northwestward with respect to the North American plate. The known fault traces within Sonoma County, shown in Figures PS-2a through PS-2i for the nine planning regions, manifest significant surface evidence of lateral or vertical movement in the past 2 million years and are considered to be potentially active in the future.

Since 1855, more than 140 earthquakes have resulted in property damage in Sonoma County. The 1906 earthquake centered on the San Andreas fault at Point Reyes had an estimated Richter-scale magnitude of 8.25, the largest seismic event in California in historic times. Effects in Sonoma County, which were proportionately greater than in San Francisco, included 61 deaths, destruction of most downtown buildings in Santa Rosa and major damage in Sebastopol, Healdsburg and other communities. The strongest earthquake since 1906 was a 1969 movement on the Healdsburg fault near Santa Rosa which registered 5.7 on the Richter scale and caused \$6 million damage in downtown Santa Rosa and residential areas to the east. Expert analysis of seismic data has indicated that the highest magnitude earthquakes to be expected for the northern San Andreas fault and the Healdsburg-Rodgers Creek faults are 8.5 and 7.5 respectively. Earthquakes of 8.0 or more on the San Andreas fault can be expected to reoccur every 50 to 200 years. An event equivalent to the strongest ground-shaking in Santa Rosa from the 1969 earthquake can be expected somewhere in Sonoma County once every 20 to 30 years.

Most of the population of Sonoma County is located between the San Andreas fault zone to the west and the Healdsburg/Rodgers Creek fault zones to the east. Four distinct but interrelated earthquake phenomena comprise potential hazards to a populated area: ground shaking, ground failure, ground displacement along fault traces, and water inundation by earthquake-generated waves and dam failures.

Groundshaking. This phenomenon is the most widespread effect of any given earthquake and therefore affects the largest number of people. Present to some extent in all earthquakes, vibration of the ground surface has the greatest potential for damage to structures. The amount of ground shaking felt at any point depends on the magnitude of fault displacement, the distance from that source and the type of earth materials in between. Bedrock transmits seismic energy but does not vibrate as much as softer materials; the strongest ground shaking from an earthquake thus is frequently felt in nearby areas underlain by deep unconsolidated alluvium. The greatest potential damage is in areas where soils and superficial units are fine grained, compressible and saturated with water, and conversely, the least damage is likely in areas with little or no superficial material, or where bedrock is massive, dry, and relatively unfractured. Maps showing the intensities of potential groundshaking in the various areas of Sonoma County have been prepared by the Association of Bay Area Governments and are available for inspection by the public at the Sonoma County Planning Department

Ground Failure. Ground failure includes landsliding, liquefaction, lateral spreading, lurching, differential settlement, and bedrock shattering. All of these involve a displacement of the ground surface due to loss of strength or failure of underlying materials during earthquake-induced shaking. This shaking can greatly increase structural damage when liquefaction transforms water-saturated soil to a semi-liquid state, thereby removing support from building foundations and causing differential settlement and building subsidence. The most susceptible areas are generally found in valleys but include the granular bay muds south of Petaluma and Sonoma and near Bodega Bay.

PUBLIC SAFETY POLICY CONCEPTS

TYPE OF SAFETY HAZARD	GENERAL PLAN ELEMENT	MAP DESIGNATION/OTHER POLICIES
SEISMIC HAZARDS	Public Safety Element	<ul style="list-style-type: none"> • Alquist-Priolo Special Studies Zone • Other Potentially Active Fault Zones • Areas with Liquefaction Potential • Areas Subject to Tsunamis • Other Policies: Building and Development Standards
	Land-Use Element	<ul style="list-style-type: none"> • Other Policies: Limitations on Permitted Uses and Densities
	Open Space Element	<ul style="list-style-type: none"> • Other Policies
OTHER GEOLOGIC HAZARDS	Public Safety Element	<ul style="list-style-type: none"> • Areas with Potential for Landslides • Other Policies: Building and Development Standards
	Land-Use Element	<ul style="list-style-type: none"> • Other Policies: Limitations on Permitted Uses and Densities
	Open Space Element	<ul style="list-style-type: none"> • Other Policies
FLOOD HAZARDS	Public Safety Element	<ul style="list-style-type: none"> • Areas Subject to Flooding by 100-Year Event • Other Policies: Building Limitations in Floodways; Development and Building Standards • Other Policies: Dam Failures
	Land-Use Element	<ul style="list-style-type: none"> • Other Policies: Limitations on Permitted Uses
	Open Space Element	<ul style="list-style-type: none"> • Other Policies
WILDLAND FIRES	Public Safety Element	<ul style="list-style-type: none"> • Areas with Potential for Wildland Fires • Other Policies: Building and Development Standards
	Public Facilities Element	<ul style="list-style-type: none"> • Other Policies: Fire Protection Services
	Land-Use Element	<ul style="list-style-type: none"> • Other Policies: Limitations on Permitted Uses and Densities
	Open Space Element	<ul style="list-style-type: none"> • Other Policies
URBAN FIRES	Public Facilities Element	<ul style="list-style-type: none"> • Other Policies: Fire Prevention and Suppression Services

Earthquake-induced landslides consist of downslope movement of soil and/or rock material and generally occur in the same areas as landslides caused by other natural energy sources such as heavy rainfall. Landslides in areas of low slope angles can result from liquefaction of subsurface layers of silt or sand during earthquakes.

Ground Displacement Along Fault Traces. The only fault in Sonoma County with known surface rupture in historic times is the San Andreas fault. During the 1906 earthquake centered near Point Reyes, horizontal displacement occurred along 170 miles of this fault and averaged 15 feet within Sonoma County. The Healdsburg, Rodgers Creek and Maacama faults all show evidence of surface displacement during the past 11,000 years but not during the last 200 years. Ground rupture along fault traces generally occurs only with earthquakes of more than 5.5 magnitude. In addition to the sudden rupture which occurs during an earthquake, some faults are subject to very slow movement, or fault creep.

Tsunamis and Earthquake-Induced Inundation. Tsunamis are large ocean waves generated by undersea earthquakes or landslides. Travelling at 400 miles per hour, they can arrive at distant coasts before news of an earthquake or local warnings can be disseminated. The height and runup distance of a tsunami are determined by water depth, underwater topography, and shape of the coastline. The tsunami expected once in 200 years would inundate areas along Sonoma County's Pacific and San Pablo Bay coasts up to 20 feet above sea level. An additional hazard is flooding due to dam failure or failure of levees during an earthquake. The largest dam in the county, Warm Springs Dam on Dry Creek, is located near a minor fault but was designed to absorb both the maximum expected displacement on this fault and the expected groundshaking from earthquakes on any fault in the region.

Collateral Damage Associated with Seismic Events. Earthquake damage to utilities and various other public facilities can produce disastrous secondary effects. Much of the destruction from the 1906 earthquake was from structural fires which could not be suppressed because of ruptured water lines, damaged roadways and difficulty of communications. Better design, stronger materials and back-up systems have reduced many potential secondary effects of earthquakes, but larger facilities and population growth have also increased the potential magnitude of damage. Because of their size and the potential damage which can result, the susceptibility of powerplants and dams to earthquake hazards is of critical importance. The maximum ground shaking intensity expected in the Geysers geothermal area from seismic events is very low because of the distances from major faults and local geological conditions.

2.1.2 Hazards of Slope Instability

The most common type of ground failure in Sonoma County is landslides, or downslope movements of soil and/or rock materials. Because of their geology and topography, extensive land areas of the county are subject to this destructive hazard. The areas most susceptible, shown on Figures PS-2a through PS-2i, include locations of past landslides in the county and hillsides where

high levels of clay absorb water, rock strata are parallel to surface slopes, displacement has fractured a fault zone or the bases of slopes have been removed by erosion or human activities. Landslides can be triggered by the increased weight due to moisture from heavy rainfall, by earthquakes and by human actions. Many of the natural earth processes which produce landslides can be triggered or accelerated by human activities such as road cuts, grading, additional loads from structures, removal of vegetation, and inappropriate alteration of drainage.

2.2 PLANNING ISSUES

2.2.1 Assessment of Hazards and Risks

Figures PS-2a through PS-2i represent a simplified version of a detailed set of maps which are on file in the Planning Department office and are included in the Safety Element as an illustrative exhibit. The large file maps are to be used in the development review process and to determine the applicability of the County's safety policies and requirements to development sites and specific locations. The file maps shall be maintained and made available for public inspection by the Planning Department and are hereby incorporated by reference into the Safety Element. Questions about the location and/or interpretation of boundaries and designations on the file maps shall be resolved by review of the various source documents on file at the Planning Department.

Most information on geologic hazards in Sonoma County has been developed or published by the California Division of Mines and Geology (DMG) and is summarized in DMG Special Report 120, Geology for Planning in Sonoma County, published in 1980. This report and a number of detailed geologic studies of small areas of the County have been prepared in cooperation with the County Planning Department. Since 1980, DMG maps have been revised to reflect a reevaluation of all faults previously considered potentially active, and the Association of Bay Area Governments (ABAG) and the U.S. Geological Survey (USGS) have produced maps of maximum expected ground shaking intensity. Knowledge of geologic hazards is also supplemented by various geologic studies prepared to evaluate proposed development projects.

The Alquist-Priolo Special Studies Zones Act adopted in 1972 mandates cities and counties to require a geologic report delineating any hazard of surface fault rupture before approving development projects in designated zones along known active faults. DMG designated "special studies" zones along seven faults in Sonoma County when the program was initiated in 1974, but later reevaluation of data and criteria resulted in the elimination of three of these fault zones and shortening of another in 1983. Present DMG criteria for designating such zones include a requirement that the fault must show clear surface evidence of displacement within the past 11,000 years.

2.2.2. Development Planning and Regulation

Numerous potential problems may be created if new construction and development are allowed in areas subject to geologic hazards. These include potential physical hazard and injury to or loss of life of the future inhabitants, potential property loss and damage, potential losses and costs for public roads and utilities, increased insurance costs, potential public costs for disaster relief, loss of integrity of sanitary waste disposal systems and related threats to public health, and erosion and sedimentation due to disturbance of vegetation and earth materials. In those areas with geologic hazards where very low-density development is allowed, mitigation of the risks of damage and injury to acceptable levels requires the imposition of special permit review procedures and construction standards. County codes require construction in unincorporated areas to conform to the requirements of the Uniform Building Code and companion codes as developed by the International Congress of Building Officials and incorporated into State Housing Codes. The Uniform Building Code includes provisions for seismic resistance, site stability, grading and special geologic studies where necessary.

Resistance to the forces of earthquakes and other geologic hazards is a major focus of requirements for state review and approval of certain types of facilities. The inspection and safety of local dams is the responsibility of the State Division of Dam Safety. Similarly, the design and construction of public schools and hospitals are also regulated by state agencies pursuant to the Field Act of 1933 and the Hospital Safety Act of 1972. The location and size of powerplants are also regulated by state and federal agencies, but the County's building permit process also applies to powerplant construction on non-federal sites.

The Land-use Element, including the land-use plan maps, takes into consideration the assessment of geologic hazards and related policies contained herein and the ways in which land uses vary in their sensitivity to geologic hazards. Agriculture, timber management and similar uses are considered to be appropriate uses for areas subject to geologic hazards because such uses ordinarily entail few structures and low human occupancy. While single-family residences are not considered appropriate in close proximity to landslides or faults, these structures can withstand expected ground-shaking in most parts of the county if designed properly. Because of their high occupancy and high value per acre, multi-family residential and most commercial and industrial uses are considered especially sensitive to geologic hazards and should not be located where normal development standards would allow substantial damage from expected hazards. Schools, utility structures, hospitals, and other facilities are considered to be especially sensitive to geologic hazards because of the need to reduce the probability of damage and interruption of service to a very low level.

2.3 POLICIES TO AVOID OR REDUCE POTENTIAL DAMAGE FROM GEOLOGIC HAZARDS

Goal PS-1: It is a goal of the County of Sonoma to avoid unnecessary exposure of people and property to risks associated with earthquakes, landslides and other geologic hazards, so as to reduce the potential for loss of life, injury, damage to property, and social and economic dislocation which would result from hazard-related disasters.

Objective PS-1.1: It is the County's objective to maintain complete data and assessments of geologic hazards and associated risks.

Objective PS-1.2: It is the County's objective that the location, type, design and construction of new development occur in a manner which will reduce the risks of damage and injury from known geologic hazards to acceptable levels.

The County shall employ the following policies related to geologic hazards:

PS-1a: The Planning Department shall maintain a file of available data from DMG, ABAG, USGS and other agencies on geologic hazards and related risks.

PS-1b: The Planning Department shall maintain a collection of all studies of geologic hazards which are prepared by public agencies or private parties during the County's development review process.

PS-1c: The Planning Department shall transmit to the California Division of Mines and Geology copies of the adopted Safety Element and geologic studies prepared by or for the county.

PS-1d: The Planning Department shall request consideration of amendments to the Safety Element to incorporate any new data on geologic hazards and related damage which significantly changes the assessments contained herein.

PS-1e: Further research shall be encouraged on the locations of seismic, slope instability and other geologic hazards within the county and the probability of hazardous events and associated effects.

PS-1f: A "geologic hazard area" combining zoning district ordinance shall be prepared for consideration by the Board of Supervisors. The combining district regulations may establish limitations on the types and intensities of permissible uses and express standards for any development that is allowed.

PS-1g: Geologic reports shall be required and reviewed by the appropriate decision-making body prior to discretionary County decisions on plan amendments, rezonings and development permits which would allow structural development in Alquist-Priolo Special Studies Zones, on lands with average slopes over 30 degrees, or wherever such development would subject property or persons to significant risks from geologic hazards shown on Figures PS-2a through PS-2i and related file maps and source documents. The geologic reports shall investigate and report findings as to the location, extent, and severity of the applicable hazards. Geologic reports shall be prepared by a geologist registered in California, and shall include recommended mitigation measures to reduce any risks to acceptable levels.

PS-1h: No structure intended for human occupancy, or defined as a "project" in the Alquist-Priolo Special Studies Zones Act and related Administrative Code provisions, shall be permitted to be placed within 50 feet of the surface trace of any active or potentially active fault shown on Figures PS-2a through PS-2i and related file maps and source documents.

PS-1i: The County shall adopt, upon their approval by the International Congress of Building Officials and the State of California, any revisions to the Uniform Building Code which increase resistance of structures to earthquake-induced ground-shaking and other geologic hazards.

PS-1j: Prior to approval of building permits for structures whose location or proposed design prevents reasonable load determination and distribution by static analysis, the Sonoma County Department of Building Inspection shall require that a dynamic analysis of the response of the structure to earthquake forces be prepared. Single-family structures may be exempted from this requirement.

PS-1k: The County shall encourage strong enforcement of state seismic safety requirements for design and construction of dams, powerplants, hospitals and schools.

PS-1l: The location, design and construction of roads, utilities, public buildings and other structures by the County of Sonoma or its various agencies shall consider and mitigate identified geologic hazards; specifically:

- 1) County facilities shall be located, designed, and operated to maintain a very low risk of failure or injury from known geologic hazards.
- 2) The County of Sonoma shall not plan nor construct public utilities or facilities which would have the effect of encouraging land development in areas which are subject to geologic hazards.

- 3) Planning Agency review or approval of public facilities or utilities proposed by the County of Sonoma or by other agencies shall consider the risks of damage from geologic hazards and shall require significant risks to be mitigated to acceptable levels.
- 4) The County shall not accept dedication of roads on lands subject to or jeopardized by landslides, slope instability or other seismic or geologic hazards which, in the determination of the Public Works Department, would result in maintenance and repair costs which are unusually high.

PS-1m: Urban services, such as sewer and water, and urban land uses shall not be authorized in areas with: 1) average slopes over 15 percent, 2) high or moderate landslide potential, or 3) close proximity to fault zones, except as authorized by specific plans in effect as of December 31, 1986; discretionary development permits for any permissible uses shall not be approved unless mitigation measures incorporated into the project will reduce the potential effects of geologic hazards to an insignificant level.

PS-1n: Extensive grading shall not be permitted on lands with slopes over 15 percent and where landslides or other geologic hazards are present.

3.0 PROTECTION FROM FLOOD HAZARDS

3.1 FLOOD HAZARDS IN SONOMA COUNTY

Flooding, or temporary inundation by water, may be caused by levee failure, high tides and storm waves, overflow of streams, standing water from heavy rainfall, dam failure, and Tsunami and Seiches. The focus of this section of the Public Safety Element is on stream overflows, which occur when the surface runoff from a watershed exceeds the capacity of the stream channel to carry the flow. Such flooding usually occurs during intense winter storms when the soil is saturated and can't absorb additional rainfall. Flooding on small streams usually peaks and recedes quickly, while floods on the lower Russian River may not peak for two days or more after the start of a major storm and may exceed floodstage for four days or more. Flood hazards are estimated in terms of the area subject to inundation by the maximum storm event expected over a 100-year period, a 10-year period or some other frequency. The height of the floodwaters resulting from these events determines the extent of the land area affected. Inadequate facilities, such as small culverts and low bridges, may impede the flow of storm runoff and cause localized upstream flooding. In some areas, flood damage may result from stream-bank failure due to erosion caused by high-velocity peak flows. Figures PS-2a through PS-2i show the general

extent of peak flooding expected once in a hundred years for each Sonoma County stream for which such analyses have been conducted. The broadest floodplains in the county are along the Russian River in Alexander Valley and south of Healdsburg, along the Laguna de Santa Rosa and Mark West Creek, and along the lower portions of the Petaluma River and Sonoma Creek.

The official flood stage level for the Russian River at Guerneville has been exceeded over 40 times in this century. Estimated damages for the 1955 and 1964 floods totalled \$7.7 and \$15.0 million respectively. The amount and value of damage from the February 1986 floods were expected to greatly exceed past totals when final estimates were completed.

Flood-related damages are of several kinds. Moving water can move or destroy buildings, wash away soil, crops, vehicles and loose objects, and transform floating debris into a dangerous hazard. Flood damage to buildings and contents may include less visible long-term effects such as weakening of building materials and the presence of mildew, dust, bacteria and other disease vectors. Effects on public facilities include blocking of roads, disruption or loss of utilities, and damage to public buildings. A particular concern in the Russian River Area is the flooding and disruption of sewage treatment plants and related storage ponds and the accompanying potential for water quality problems.

3.2 PLANNING ISSUES

3.2.1 Assessment of Hazards and Risks

Assessments of flood hazards for all major streams in the county have been completed in recent years by the cooperative efforts of the Sonoma County Water Agency and various federal and state agencies. The studies of flood hazards prepared for the Federal Emergency Management Agency (FEMA) and Federal Insurance Administration pursuant to the National Flood Insurance Act of 1968 were based on detailed estimates of drainage areas, peak flows, water depth and flood elevations for numerous points along major streams and contained maps showing the areas which would be affected by the level of flooding with a one percent (1%) probability of occurring in any year. The approximate boundaries of these areas are shown on Figures PS-2a through PS-2i. As of 1986, the Army Corps of Engineers was revising the FEMA maps for the Russian River and Dry Creek to reflect the storage capabilities of Warm Springs Dam, and was updating and expanding the maps in other areas. The Sonoma County Water Agency, the local agency primarily responsible for flood control efforts, has prepared studies of surface hydrology and drainage plans for most urbanized areas in the county and assists federal agencies in the analysis and mapping of flood hazards.

3.2.2 Flood Prevention and Control

Construction of dams, reservoirs, levees and modifications to stream channels have significantly reduced flood hazards on several county streams. Flood levels on the Russian River dropped several feet when Coyote Dam in Mendocino County was completed in 1959. Warm Springs Dam, another large project by the Army Corps of Engineers, has reportedly eliminated flood hazards in Dry Creek Valley and dropped the 100-year flood elevation three feet or more in the lower Russian River, although revised flood maps are not yet complete. Other Corps projects have included levees and channel improvements along the Petaluma River and its tributary streams. Prevention of floods along Santa Rosa Creek and its branches was a principal reason for the construction of five small dams by the Sonoma County Water Agency. Of the 36 other dams in the county which are registered with the State Division of Dam Safety, very few have flood control as a major function or objective.

Structural solutions are no longer the preferred approach to mitigation of flood hazards because of the high costs of such projects, the long time horizon for project planning and construction, a complex design process to mitigate environmental impacts, the potential for future silt accumulations from a lack of "flushing" action downstream, and a false sense of security in floodplain areas. Recent evaluations of cost-benefit relationships by the Army Corps of Engineers concluded with the recommendation that the Corps initiate no further flood control projects in Sonoma County. Future flood control activities by the County or other agencies may include improvements to drainage channels and removal of gravel from stream beds. Reducing the extent of flooding may also be accomplished through controls on development, encouraging agriculture and timber management practices in watershed areas which will reduce runoff, and requiring retention basins and other design measures which will increase on-site absorption of stormwater in urban areas.

3.2.3 Floodplain Management

Floodplain management attempts to reduce the exposure of people and property to flooding in known flood hazard areas and to regulate development in a drainage basin so that it does not increase the frequency or elevation of floods in downstream areas. Controlling the intensity of development, use and human occupancy of designated flood hazard areas has become the preferred alternative in most cases because of long-term economic benefits, including reduced needs for costly construction projects and disaster relief. The main objective in floodplain management is to limit uses to those which can sustain periodic flooding and which do not increase flood hazards elsewhere. A major obstacle to this approach is that the environmental characteristics of floodplains are frequently attractive for many types of land development. The availability of water, soil, transportation and visual amenities has resulted in intense development of some floodplain areas in the past. Many of the communities in unincorporated Sonoma County are traversed by streams which are subject to some seasonal flooding. Incompatible development within designated floodplains is found in Guerneville and nearby urbanized areas along the lower Russian River, Windsor, Penngrove, Geyserville, Glen Ellen and Cazadero.

Initiating a floodplain management program has become a near-mandate for flood prone communities because of federal and state legislation. Federal flood insurance is available only to property owners in communities committed to floodplain management, and such insurance is required for all federally regulated loans to purchase improved property in flood-hazard areas. California also requires local floodplain regulation as a condition of receiving state funds for flood control projects. A local "hazard mitigation plan" is also required by the federal government soon after federal aid is requested for a flood disaster.

Pursuant to requirements for the flood insurance program, the County of Sonoma adopted an ordinance in 1981 which addressed "flood damage prevention" by requiring special permits for all construction in designated 100-year floodplains and allowing no development which would raise the flood level more than one foot. Other standards in the ordinance address building elevations, anchoring, construction materials, utilities, and criteria for variances. These regulations also apply to designated coastal areas subject to high tides and tsunamis.

Restrictions on development in floodplains should limit new uses to agriculture, recreation and other low-intensity activities which do not entail residences or other occupied structures. Exceptions to this policy may be appropriate, however, where there are significant public benefits to allowing infilling of development on vacant lands in communities with urban utilities and services. Zoning may also be used to limit rebuilding of structures destroyed by floods in designated floodplains. Consistent application of floodplain management practices would not allow extension of roads and utilities which would facilitate new development in a designated floodplain.

3.3 POLICIES TO AVOID OR REDUCE POTENTIAL DAMAGE FROM FLOODING

Goal PS-2: It is a goal of the County of Sonoma to prevent unnecessary exposure of people and property to risks of damage or injury from flooding.

Objective PS-2.1: It is the objective of Sonoma County that its agencies shall maintain complete documentation and assessment of available data on flood hazards.

Objective PS-2.2: It is the County's objective that the location, type, design and construction of new development be regulated to reduce the risks of damage and injury from known flooding hazards to acceptable levels.

The County shall utilize the following policies related to flood hazards:

PS-2a: Maps and other available information on areas subject to flood hazards within Sonoma County shall be maintained by the Sonoma County Water Agency, Planning, Public Works and Building Inspection Departments, and the Office of Emergency Services.

- PS-2b:** The County shall coordinate its flood hazard analysis and management activities with the Army Corps of Engineers, FEMA and other agencies involved in flood hazard mapping, shall acquire data on such hazards, and shall request changes in FEMA maps where appropriate to reflect new data or analyses.
- PS-2c:** The FEMA maps and data shall be used as the basic source maps for the land-use planning and development review activities of the County. Parcel-specific scaled interpretations of these maps shall be maintained for each of the nine sub-county planning regions by the Planning Department and shall be utilized for permit review purposes, along with site-specific elevation data.
- PS-2d:** The Sonoma County Water Agency shall be encouraged to prepare a comprehensive analysis of the potential flood hazards and drainage impacts associated with the adopted land-use plans of the various jurisdictions within the Russian River Basin.
- PS-2e:** The 100-year flood event and corresponding flood elevations shall be used as the measure of acceptable level of risk and protection for flood control projects and development controls of the County of Sonoma.
- PS-2f:** Evaluation of flood-related hazards shall be a mandatory part of environmental assessments for public and private projects which are located within areas subject to known flood hazards.
- PS-2g:** Environmental review of proposals for development of large-scale projects in the Russian River, Petaluma River, and Sonoma Creek drainage basins shall include an evaluation of the project's potential for increasing flood damage downstream through a greater frequency of flooding and/or a higher flood elevation.
- PS-2h:** Referrals on proposed development projects which require discretionary County approvals shall be sent to the Sonoma County Water Agency for its review and comment, when such projects are located within areas subject to known flood hazards or when the project might increase downstream flood levels or frequency.
- PS-2i:** Development and related grading and fills shall be required to be designed in a manner which minimizes any increase in stormwater runoff, soil erosion, and downstream flooding and siltation.
- PS-2j:** The financing of drainage facilities to handle the surface runoff from new development shall be the responsibility of the developer.
- PS-2k:** Drainage facilities shall be designed and constructed according to the standards of the Sonoma County Water Agency.

- PS-21:** Tentative and final subdivision maps and approved site plans shall be required to show areas subject to flooding as indicated on the current FEMA maps.
- PS-2m:** Limitations on new development in floodplains and other non-structural techniques of preventing damage from flooding shall be preferred by the County over large flood control projects unless the intensity of existing and planned development in a particular floodplain sector requires a high level of protection and justifies the costs of structural measures.
- PS-2n:** New development shall be made safe from a 100-year flood event by prohibiting new permanent structures within the floodway and by requiring any development that may be permitted within the floodplain to be raised above the 100-year flood elevation.
- PS-2o:** The County and its agencies shall consider the potential risk of damage from flooding in the location, planning, design, and review of projects to construct roadways, utilities, and other public facilities which could facilitate development within a designated floodplain.
- PS-2p:** The Sonoma County Water Agency shall be responsible for undertaking flood hazard mitigation projects on a continuous basis on selected waterways in the County, subject to any applicable restrictions for "protected natural riparian corridors" and "modified natural riparian corridors" expressed in the Open Space Element; priorities for projects shall be established annually by the Board of Supervisors / Board of Directors through the CIP process.
- PS-2q:** The land-use plan maps and zonings of the County of Sonoma shall limit development in designated floodplains to low-intensity uses without large permanent structures. Areas where there are significant public benefits of infill development on vacant parcels in communities with urban utilities and services in place as of 1986 shall be exempt from this policy, provided that such benefits exceed the potential damage and costs associated with the risk.
- PS-2r:** The County of Sonoma shall continue to enforce the development standards and permit requirements of Chapter 7B of the County Code and other adopted regulations which implement the floodplain management objectives of the National Flood Insurance Program.

4.0 POLICIES FOR PROTECTION FROM FIRE HAZARDS

4.1 WILDLAND FIRE HAZARDS IN SONOMA COUNTY

The combination of highly flammable fuel (vegetation), long dry summers (weather), rugged topography (steep slopes) and occupancy by humans could result in a hazard of significant proportions in many areas of Sonoma County. Prevention of damaging fires is a major concern of the County not only because of the deaths, injuries, economic losses and long-term disruption caused by structural fires but also because of the large public investment in fire suppression equipment and personnel and the high costs of maintaining and using these resources. Destruction of woodlands and other natural vegetation by wildland fires is also a major public concern because of the resulting loss of timber, wildlife habitat, scenic quality and recreational sites and the increased potential for soil erosion, sedimentation of fisheries and reservoirs, and downstream flooding.

Most damage from wildland fires results from a few large fires in the dry-weather months. Due to its Mediterranean climate, Sonoma County experiences a long dry period which lasts from May to November, during which high-risk conditions are commonly maintained. Two major fires in 1964 burned 85,000 acres east of Santa Rosa and destroyed over 100 homes and 25,000 acres of commercial timber. The Creighton Ridge fire of 1978 burned more than 11,000 acres west of Cazadero and destroyed 56 dwellings. Reports show 42 wildland fires of 100 acres or more in the county in the 1965-1984 period.

The estimated severity of natural fire hazards for most of the unincorporated areas of the county has been mapped by the California Department of Forestry (CDF); areas with a moderate or high risk are shown in Figures PS-2a through PS-2i for the nine planning regions. The categories of probability of large destructive wildfires are determined by the amount and flammability of vegetation, the steepness of surface slopes, and the area's climatic characteristics, including temperature, precipitation and fuel moisture, humidity, and winds. Over one-half of the county is classified as "High" and "Very High" in severity with the highest hazard found in mountainous areas where summers are very dry, woodlands provide abundant fuel, and steep slopes increase fire spread and the difficulty of containment.

A primary concern to both CDF and the Sonoma County Department of Fire Services, as well as most local fire protection agencies, is the development of residences in high-risk rural areas. Human activities have greatly increased the number of fires in these areas and now account for 9 out of 10 wildland fires. Rural residential uses not only cause fires and receive fire damage directly, but the responsibilities of fire suppression agencies to prevent personal injury and property damage mean that limited resources frequently must be devoted to structural protection while the wildfire's perimeter spreads,

threatening additional lands and structures. Isolated residences in rural areas also have fewer neighbors or passersby to detect fires, alert residents and authorities and assist in suppression efforts, resulting in larger fires, more damage and increased potential for spreading into wildland areas. The probability of large damaging fires in some urban areas is affected to some extent by weather conditions and the spread of fires in surrounding wildland areas. However, their size and spread are usually determined more by the nature of construction, the precautions taken to prevent fires and the arrangements made to suppress those fires. Services for suppression of structural fires provided by the County and other local public and volunteer agencies are addressed in the Public Facilities and Services Element.

4.2 PLANNING ISSUES

4.2.1 Assessment of Hazards and Risks

The classification of natural fire hazard severity levels described above and shown on Figures PS-2a through PS-2i provides a limited picture of the fire-related hazards that actually exist. Because of the size of the areas analyzed, wide differences in vegetation and slope exist within each area and the natural hazard in small local areas can be much higher or lower than shown. The maps show the severity of fire hazards only in those areas outside city boundaries which are classed as "wildlands" and therefore within the "State Responsibility Area" served by CDF. Finally, the intent of these maps is to show high-risk undeveloped areas where fires will spread rapidly; the causes, frequency, costs and policy problems associated with fires in rural areas are not mapped.

The analyses used in preparation of the land use plan maps included an evaluation of the risks of wildland fires; review of individual development permits should include an assessment of vegetation, slopes and climate on particular sites, an evaluation of the level of protection required by the proposed uses, identification of the existing or proposed arrangements for fire prevention and fire suppression, and a determination of any service deficiencies and needed mitigation measures. The assessment of potential damage from structural fires is especially important for residential uses and for public buildings and facilities whose high occupancy or critical functions justify that acceptable risks be set at a low level. Other structures or uses that warrant evaluation of fire risks include all multi-story and immediately contiguous buildings, mobile homes, uses of flammable substances or explosives, and older structures lacking modern fire safety features.

Evaluation of potential damage from fire hazards must also consider relationships to other hazards. Fires can be started indirectly by the effects of earthquakes, landslides and windstorms. Provision of fire suppression services during such disasters also can be made much more difficult by the damage to streets, utilities and communications.

4.2.2 Land Use Planning in Areas Subject to Fire Hazards

A principal means of minimizing the risk of and potential damage resulting from both structural and wildland fires in rural areas is to limit the types and intensities of land uses which are permissible in hazardous areas. Land use plans should consider the dangers inherent in mixing houses with natural vegetation and limit future costs of fire suppression by controlling the location, density and use of structures in high-risk rural areas. Wildland fire hazards may be only partially mitigated by the imposition of the various development standards, but these hazards may be entirely eliminated only by the removal of natural vegetation, installation of dependable water systems and other changes which accompany development at urban densities. Rural development should be most restricted where natural fire hazards are high, provisions for fire protection are limited, and the distances and road access prevent timely responses by firefighting personnel and rapid evacuation by residents.

4.2.3 Development Standards in Areas Subject to Fire Hazards

Many aspects of development and human activities are regulated by the County, CDF and local agencies in order to prevent, detect and suppress fires at the source. The intent of such regulations is not only to minimize on-site property damage and personal injury but also to avoid damage to adjacent properties and prevent unnecessary expenditures for fire suppression services. The effectiveness of such regulations also influences the fire protection ratings prepared by insurance industry organizations to determine appropriate fire insurance premiums. Requiring higher levels of "built-in" fire protection in new construction is frequently viewed by local agencies as the most cost effective way of responding to increasing demands for fire suppression services.

Fire safety standards adopted by the County include the Uniform Fire Code, National Fire Code, Uniform Building Code and companion codes, and the subdivision and zoning ordinances. The Uniform Fire Code regulates exits, alarms and suppression devices and provides detailed standards for many commercial, industrial and public uses. The other construction codes address materials and design of new construction. The County's subdivision ordinance controls the access, road design, water supply and other physical features of new subdivisions of land. The zoning ordinance's requirements for uses and building placement can aid fire prevention by grouping similar uses and regulating the allowed intensity of use. These codes and standards apply to development in all unincorporated areas of the county, except that the Uniform Fire Code only governs lands outside of the independent fire districts which enforce various adopted versions of the Uniform Fire Code. Because of differences in code requirements, staffing and training between local fire districts, review and inspection of development in unincorporated areas varies

widely. Consequently, a major goal of the Sonoma County Department of Fire Services, which was formed in 1985, has been attainment of a reasonable level of uniformity in fire prevention efforts throughout the county. The Department's Fire Marshall reviews building permits and development plans and, when requested, assists local fire districts in their adoption and enforcement of fire safety codes. Evaluation of current standards indicates that improvements in the areas of road design, water supply and automatic sprinkler systems could increase the effectiveness of local fire protection services.

CDF is involved in the fire prevention process in several ways. State law requires CDF to enforce requirements on setting, containing and fighting fires, exhaust systems, spark arrestors, roof coverings and attic openings. Inspections are made in wildland areas as staff time permits, and violators can be penalized. In order to reduce flammable fuels in wildland areas, CDF works with landowners to conduct controlled burns. CDF guides for residential development in wildland areas provide recommended standards on access, road design, street numbers and signs, water supply, building materials, windows, setback of structures and clearance of vegetation. These guides have not been officially adopted but are considered by County staff in reviewing development permits.

4.3 POLICIES RELATED TO WILDLAND FIRE HAZARDS

GOAL PS-3: It is a goal of the County of Sonoma to prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.

Objective PS-3.1: It is the County's objective to maintain complete documentation and assessments of data on wildland and urban fire hazards.

Objective PS-3.2: It is the County's objective that the location, type, intensity, design and construction of new development be regulated to reduce the risks of damage and injury from known fire hazards to acceptable levels.

The County shall utilize the following policies related to wildland fire hazards:

PS-3a: Maps and other information on wildland and structural fire hazards shall be maintained by the Sonoma County Fire Services Department, Planning Department, and Office of Emergency Services.

PS-3b: Environmental assessments prepared by the County of Sonoma shall consider the severity of natural fire hazards, potential damages from wildland and structural fire hazards, the adequacy of fire protection provisions, and appropriate mitigation measures consistent with the provisions of this element.

PS-3c: Areas subject to "high" and "moderate" fire hazards, as mapped on Figures PS-2a through PS-2i, should not be designated for commercial, industrial or residential land-use categories unless two of the following three criteria are met:

- 1) Flammable vegetation is minimal or will be removed.
- 2) The supply, storage and availability of water for fire suppression purposes conform to applicable requirement of CDF, the County and fire districts.
- 3) The access, road design and response times conform to applicable requirements of CDF, the County and fire districts.

PS-3d: Revisions to the Uniform Fire Code, Uniform Building Code, National Fire Code and other model codes which address fire safety shall be adopted and enforced by the County as soon as practicable after such revisions are approved by inspection organizations and the State of California.

PS-3e: Modifications to adopted codes to require higher levels of on-site prevention, detection and suppression, including automatic sprinkler systems, shall be considered where model codes and available suppression services do not provide acceptable levels of protection.

PS-3f: Proposals by County departments and agencies for plan changes, code revisions, or public facility construction and privately-initiated applications for discretionary development permits shall be referred to the Department of Fire Services, CDF and/or local fire protection agencies where appropriate, for comment; comments of these agencies shall be considered by the applicable decision-making body prior to taking any action on the proposal.

PS-3g: The Department of Fire Services shall assist local agencies in their efforts to evaluate, adopt and enforce fire safety standards and shall encourage adoption of up-to-date model codes.

PS-3h: Strong enforcement of state requirements for fire safety by the California Department of Forestry shall be encouraged.

PS-3i: Continued operation of CDF programs for fuel breaks, brush management, controlled burning, revegetation and fire roads shall be encouraged.

PS-3j: The fire safety standards recommended in CDF's "Fire Safety Guides", including guidelines for water supply, minimum road widths and clearance around structures, shall be incorporated where deemed appropriate by the County Department of Fire Services, into any proposed revisions to County codes and standards for consideration by the Board of Supervisors.

5.0 POLICIES FOR EMERGENCY PREPAREDNESS

5.1 ORGANIZATION AND RESPONSIBILITIES

Because the appropriate preparations and responses to emergencies related to the hazards discussed in the preceeding sections involve much the same personnel, resources and actions, this section addresses all such preparations. The management and coordination of emergency preparedness efforts is shared by all levels of government, but the County bears a primary responsibility for response to most disasters occurring in unincorporated areas. The County's Office of Emergency Services (OES) is the agency designated to coordinate the emergency response services of County departments and other agencies; in emergency situations, it is authorized to request aid from other agencies, prepare emergency proclamations and regulations, obtain vital supplies, and otherwise corrdinate relief efforts.

The functions and responsibilities of the various public agencies and service organizations in Sonoma County are expressed in the County's "Multi-hazard Emergency Plan." The activities and resources needed to fulfill those responsibilities are presented in a number of functional plans. Each agency with assigned functions in times of emergency must prepare plans, procedures and checklists as needed to actually carry out their role. The basic plan and functional plans were being updated and reorganized as of 1986 in response to recent changes in state requirements.

5.2 PLANNING ISSUES

5.2.1 Communication of Information About Hazards

The County Emergency Plan contains descriptions of the hazards identified in this element, other natural hazards, and various types of human-caused accidents, explosions, attacks and disorders. Although much information is available on natural hazards, the complete assessment of related risks of damage and injury requires additional research and inter-agency communication.

Compilations of data on possible disasters and appropriate responses can aid emergency preparedness only if the information is transmitted to the people who would be affected and the people with the duty to respond. Dissemination of such information begins with the distribution of the emergency plan to responsible agencies and the media. Making all residents aware of potential disasters, appropriate individual or household preparations and planned public responses is of critical importance to adequate emergency preparedness but is difficult to achieve because of the costs, logistics and public apathy.

5.2.2 Emergency Response Operations

Activities addressed by the emergency plan include warning, communication, fire suppression, rescue, law enforcement, traffic control, medical care, transportation, utilities, procurement of supplies, and provision of food, clothing and shelter. Major problems in emergency operations include determining the content and timing of public warnings, disseminating those warnings rapidly, maintaining inter-agency communications, monitoring purchases and supplies, organizing emergency operations centers, funding activities, managing shelters, supervising volunteers, controlling traffic, and maintaining public health.

After a major disaster, meeting the needs of disaster victims may involve financial aid, counseling and assistance in cleaning, rebuilding and relocating housing and businesses. In order to be better prepared for future disasters, identification of problems and reevaluation of response plans should also take place immediately after emergencies. This type of post-event analysis and resulting revision of plans for hazard mitigation are required whenever federal or state disaster relief funds have been requested.

5.2.3 Dam Failure

The State Dam Safety Act requires that owners of dams whose failure would cause loss of life or personal injury must prepare maps of the downstream areas which would be inundated and submit those maps to the California Office of Emergency Services. According to preliminary evaluations by the County OES, at least 13 dams in Sonoma County meet the criteria for preparation of inundation maps, but mapping had been completed for only eight of those dams as of 1986.

5.2.4 Hazardous Materials

If released into the workplace or the environment, many man-made substances used in industrial and commercial activities can be hazardous to the health of human and other life. As the numbers and use of such materials have increased, potential hazards and actual damage have both increased. Public concerns have led to tighter controls on the production, transport, storage, sale and use of hazardous materials and, particularly, on the handling and disposal of concentrated residues and wastes produced by power plants and other industrial operations.

Hazardous materials are utilized or produced at many locations in Sonoma County but only a limited number of situations have been identified as significant hazards. The electrical generating plants in the Geysers geothermal area use and produce large quantities of hazardous materials which are hauled in and out of the area by trucks on winding mountain roads; spills and releases of such materials have occurred numerous times. The most

widespread threat from hazardous materials in Sonoma County is the potential of petroleum fuels getting into ground water and surface water, particularly from deteriorated underground tanks. Other sites with a known potential for water pollution from hazardous materials include the County's solid waste landfill and transfer stations and several industrial operations.

Although general plans are not required to address the management of hazardous materials, the subject is included herein because it has become a major public safety issue requiring significant resources and attention by local emergency response agencies. County departments and current responsibilities in this field include:

- Office of Emergency Services: Coordination of hazard assessment and response planning.
- Public Health Department: Inventory and regulation of storage tanks.
- Public Works Department: Management of solid waste disposal system.
- Planning Department: Review of development proposals.
- Sheriff's Office and Fire Services Department: Evacuation, rescue, traffic control and other emergency response activities.

Local fire agencies are involved in both emergency response activities and the regulation of some hazardous materials pursuant to adopted fire codes. State agencies involved in the field include the Regional Water Quality Control Boards, Health Services, Public Utilities Commission, CalTrans and the California Highway Patrol.

Recent state legislation has: 1) established standards for the permits, installation, replacement, repair and monitoring of underground storage tanks; 2) required monitoring of ground water near landfills; and 3) mandated both businesses and governments to prepare plans of response to releases of hazardous materials. Complete implementation of such requirements has proven time-consuming and difficult. Areas where improvements or additional effort are needed include the inventorying of sites and uses with hazardous materials, response plans for many situations, standards and review procedures for new development, regulation of the transportation of materials, and long-term planning for disposal of hazardous wastes.

5.2.5 Evacuation/Emergency Routes

The type of emergency or disaster and its size and location would determine the precise evacuation routes which would be appropriate. The maximum road capacity is only one of several factors which would be considered; however, roadways are not ordinarily designed for evacuation purposes but for normal

daily operations and traffic. The most important regional evacuation routes would likely be U.S. Highway 101, and State Highways 12, 1, 116, 37, 121 and 128, as well as county-owned arterial highways. Standards for these roadways are expressed in the Circulation and Transit Element. Freeway overpasses and interchanges on Highway 101 can be expected to be damaged during a major earthquake, as well as bridges on a number of state and county arterials. Landslides could cause temporary blockages of many routes within mountainous or hillside areas.

5.3 POLICIES RELATED TO EMERGENCY SERVICES

Goal PS-4: It is a goal of the County of Sonoma to provide intergovernmental coordination directed towards continuance of essential public services and provision of disaster relief services during emergency situations.

Objective PS-4.1: It is the County's objective to update and improve its various measures, plans and procedures for providing and coordinating disaster relief and emergency services in Sonoma County.

The County shall utilize the following policies related to emergency services.

PS-4a: Under the direction of the County Administrator and the Board of Supervisors, the County Office of Emergency Services shall be responsible for the planning, coordination, management and evaluation of responses by public agencies to major disasters and emergencies in Sonoma County.

PS-4b: A multi-hazard emergency response plan which conforms to state and federal requirements, shall be developed and maintained.

PS-4c: All County departments and personnel assigned responsibilities by the County Emergency Services Plan shall prepare and maintain the procedures and checklists required to fulfill their responsibilities.

PS-4d: The County Office of Emergency Services, when requested, shall assist County departments and local agencies in preparing the program of activities need to fulfill their assigned responsibilities.

PS-4e: The County shall make arrangements with the state, adjacent counties, cities and other agencies for mutual aid in emergency situations.

PS-4f: Emergency service plans and agreements shall be based on a realistic assessment of the limited resources available to responsible agencies.

- PS-4g:** Information on potential disasters, appropriate preparations and planned responses shall be disseminated as widely as possible to the media and general public and to the people most affected by potential disasters.
- PS-4h:** A system which allows rapid communication between all public agencies involved in emergency operations shall be developed and maintained.
- PS-4i:** A program for evacuating large areas in emergency situations, including the routes to be used for various emergencies in each area of Sonoma County, shall be developed and maintained.
- PS-4j:** A program designed to coordinate, repair, and restore essential public service and utility systems following disaster-caused interruptions shall be prepared and maintained.
- PS-4k:** Following major emergencies, the Office of Emergency Services shall coordinate interagency evaluation of responses and operations during the emergency and shall propose appropriate revisions to the County's Emergency Plan.
- PS-4l:** Following requests for disaster relief assistance by the state and/or federal government, the County shall prepare hazard mitigation reports and plans as required.
- PS-4m:** The timely completion and filing of inundation maps for all dams whose failure could cause loss of life or personal injury within Sonoma County shall be encouraged.
- PS-4n:** State and County requirements for the storage and control of hazardous materials shall be implemented, including requirements for management plans with descriptions of stored materials, appropriate security precautions, and contingency plans for all permitted storage.
- PS-4o:** An inventory of sites with storage or use of significant quantities of hazardous materials shall be prepared and maintained.
- PS-4p:** A use permit shall be required for any commercial or industrial use involving potentially hazardous materials. Hazardous waste management plans shall be required as a condition of approval for such permits.
- PS-4q:** Where appropriate and authorized by state law, the County shall regulate the transportation of hazardous materials to minimize the potential for damage and shall seek regulation by other agencies consistent with adopted County policies; County regulations may include limitations on routes which may be used for transport.

PS-4r: County-owned solid waste disposal facilities shall be designed and operated so as to prevent damaging releases of hazardous materials.

PS-4s: A hazardous materials advisory group shall be established and composed of representatives of public agencies, businesses and other entities.

PS-4t: A draft "Hazardous Materials Management Plan" which provides for 1) the long-term prevention of releases of hazardous materials, 2) effective responses to such releases, 3) the safe transport and disposal of hazardous wastes, and 4) a public information program shall be prepared by the County Office of Emergency Services with the assistance of other appropriate county departments and the hazardous materials advisory group. The draft plan shall be submitted to the Board of Supervisors for its consideration and approval.

6.0 PUBLIC SAFETY IMPLEMENTATION PROGRAM: 1987-1992

Public Safety Program 1: Safety Hazards Information System / Related Plan and Zoning Amendments

Type of Program: Administrative

Responsible Agency: Planning Department

Timeframe: On-going

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: PS-1a,-1b,-1d,-1g,-1m,-2a,-2b,-2m,-2q,-3a,-3b,-3c

Program Description: Log and maintain records by assessors parcel number of all mapping and reports regarding geologic and flood hazards information prepared for development applications and by other sources. Utilize applicable information in assessing constraints for an area. Revisions to plans and zoning would be recommended as appropriate.

Public Safety Program 2: "Floodplain" and "Geologic Hazard Area" Zoning Combining Districts.

Type of Program: Zoning Ordinance Amendments

Responsible Agencies: Planning Department, Building Department

Timeframe: Within 2 years following adoption of revised general plan

Budgetary Impact: No increase in departmental budget allocation

Policy Reference: PS-1f

Program Description: Prepare for adoption by the Board of Supervisors amendments to Chapter 26 of the Sonoma County code to: 1) revise flood plain zoning restrictions in conformance with Chapter 7 of the Sonoma County Code and 2) include a "geologic hazard area" zoning combining district which establishes regulations for permissible types of uses and their intensities and appropriate development standards.

Public Safety Program 3: Drainage, Erosion, and Fire Safety Standards for Subdivisions

Type of Program: Subdivision Ordinance Amendments

Responsible Agencies: Planning Department, Building Inspection
Department, Water Agency.

Timeframe: Within two years of adoption of revised general plan

Budgetary Impact: No increase in departmental budget allocation

Program Description: Prepare for consideration by the Board of Supervisors amendments to Chapter 25 of the Sonoma County Code to clarify standards for drainage, erosion control and fire safety.

Public Safety Program 4: Maintenance of Multi-hazard Emergency Response Plan

Type of Program: Administrative

Responsible Agency: Office of Emergency Service, Administrator's Office

Timeframe: On-going

Budgetary Impact: None

Program Description: Update and maintain multi-hazard emergency response plan in conformance with state and federal requirements. Includes facilities monitoring and regular practice drills.

Figure PS-2a

SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:

Sonoma Coast / Gualala Basin Planning Area

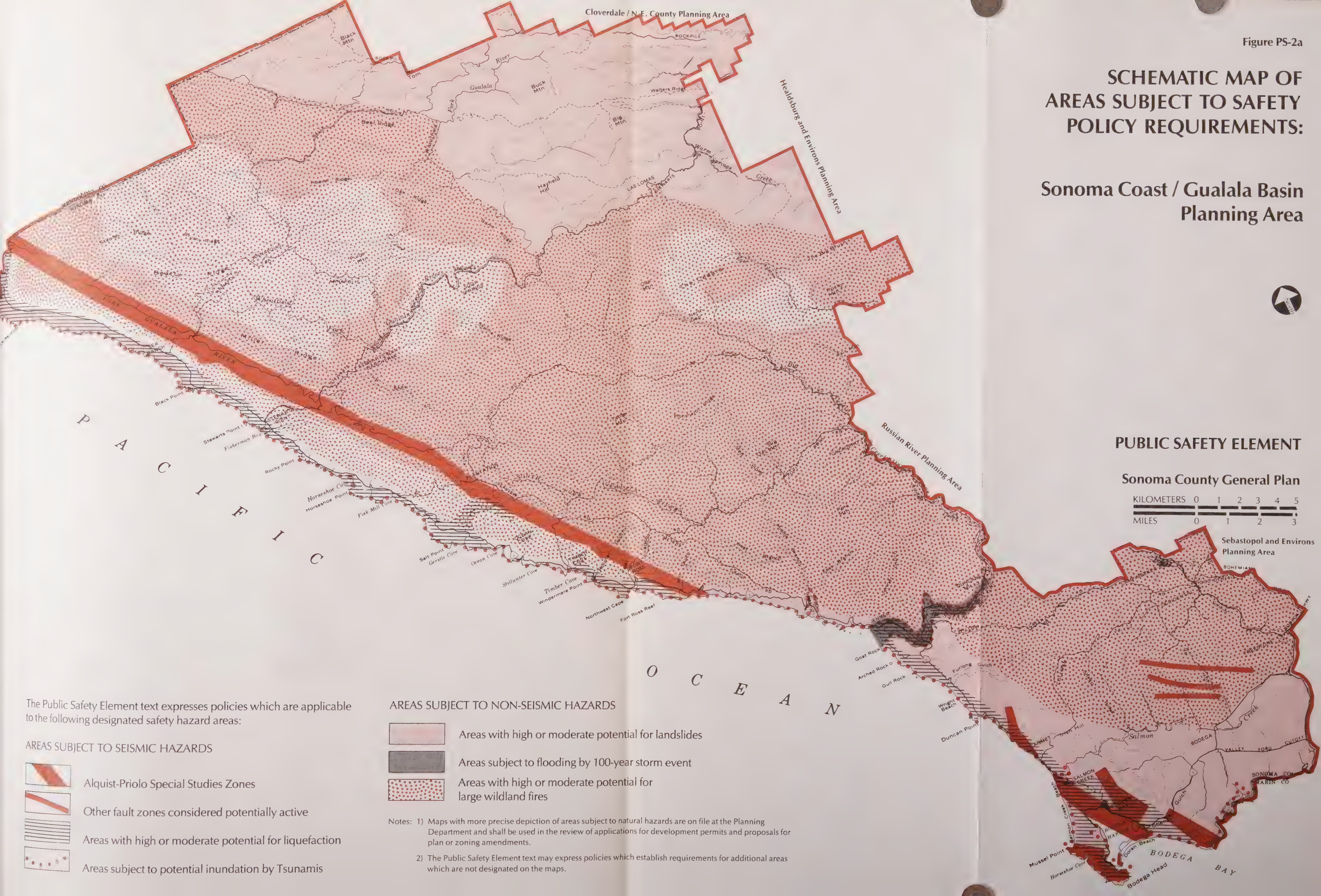


PUBLIC SAFETY ELEMENT

Sonoma County General Plan



Sebastopol and Environs
Planning Area



The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

- Alquist-Priolo Special Studies Zones
- Other fault zones considered potentially active
- Areas with high or moderate potential for liquefaction
- Areas subject to potential inundation by Tsunamis

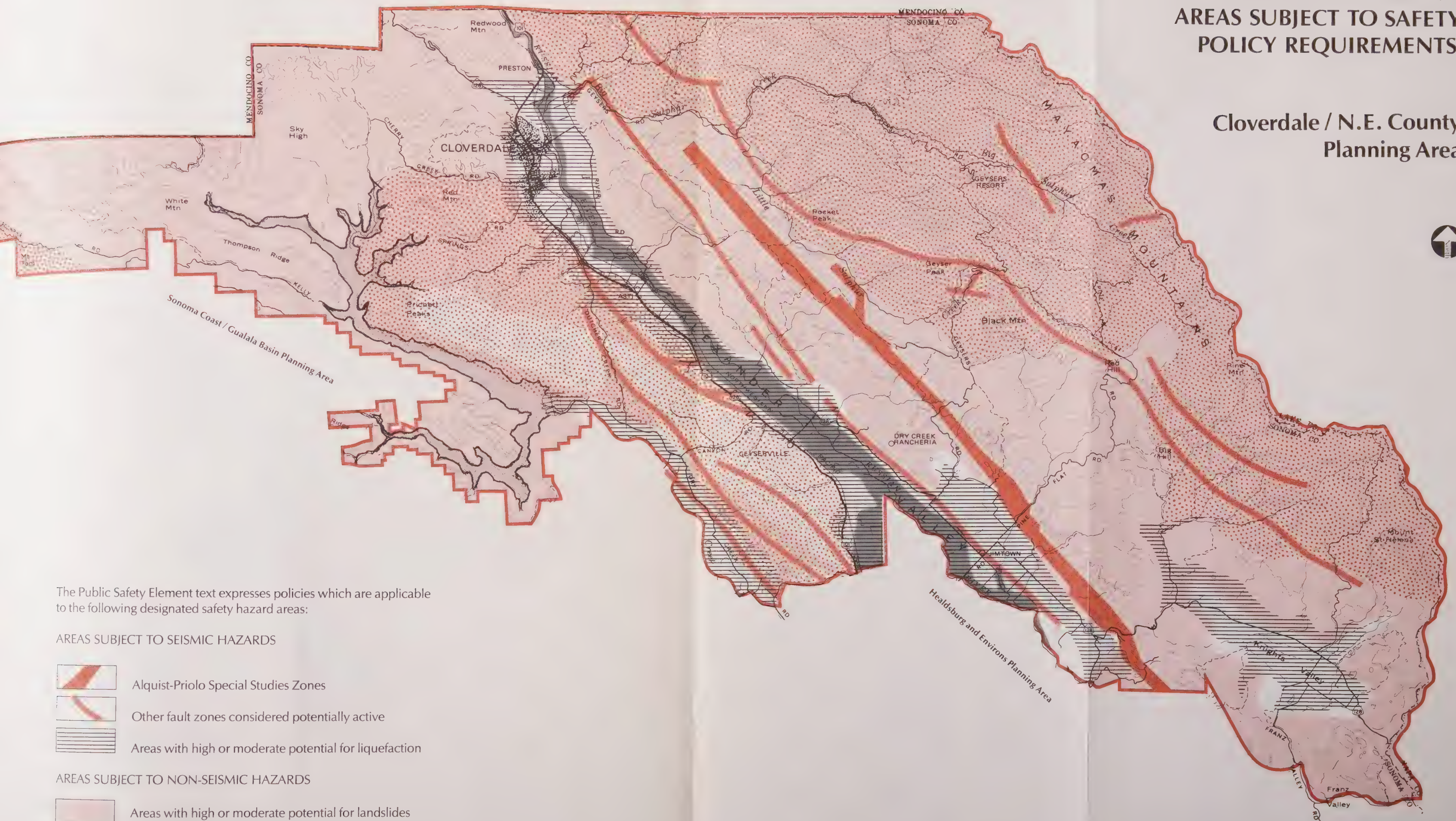
AREAS SUBJECT TO NON-SEISMIC HAZARDS

- Areas with high or moderate potential for landslides
- Areas subject to flooding by 100-year storm event
- Areas with high or moderate potential for large wildland fires

Notes: 1) Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.
2) The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.



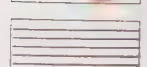
SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:

Cloverdale / N.E. County Planning Area






The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

-  Alquist-Priolo Special Studies Zones
-  Other fault zones considered potentially active
-  Areas with high or moderate potential for liquefaction

AREAS SUBJECT TO NON-SEISMIC HAZARDS

-  Areas with high or moderate potential for landslides
-  Areas subject to flooding by 100-year storm event
-  Areas with high or moderate potential for large wildland fires

- Notes: 1) Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.
- 2) The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.

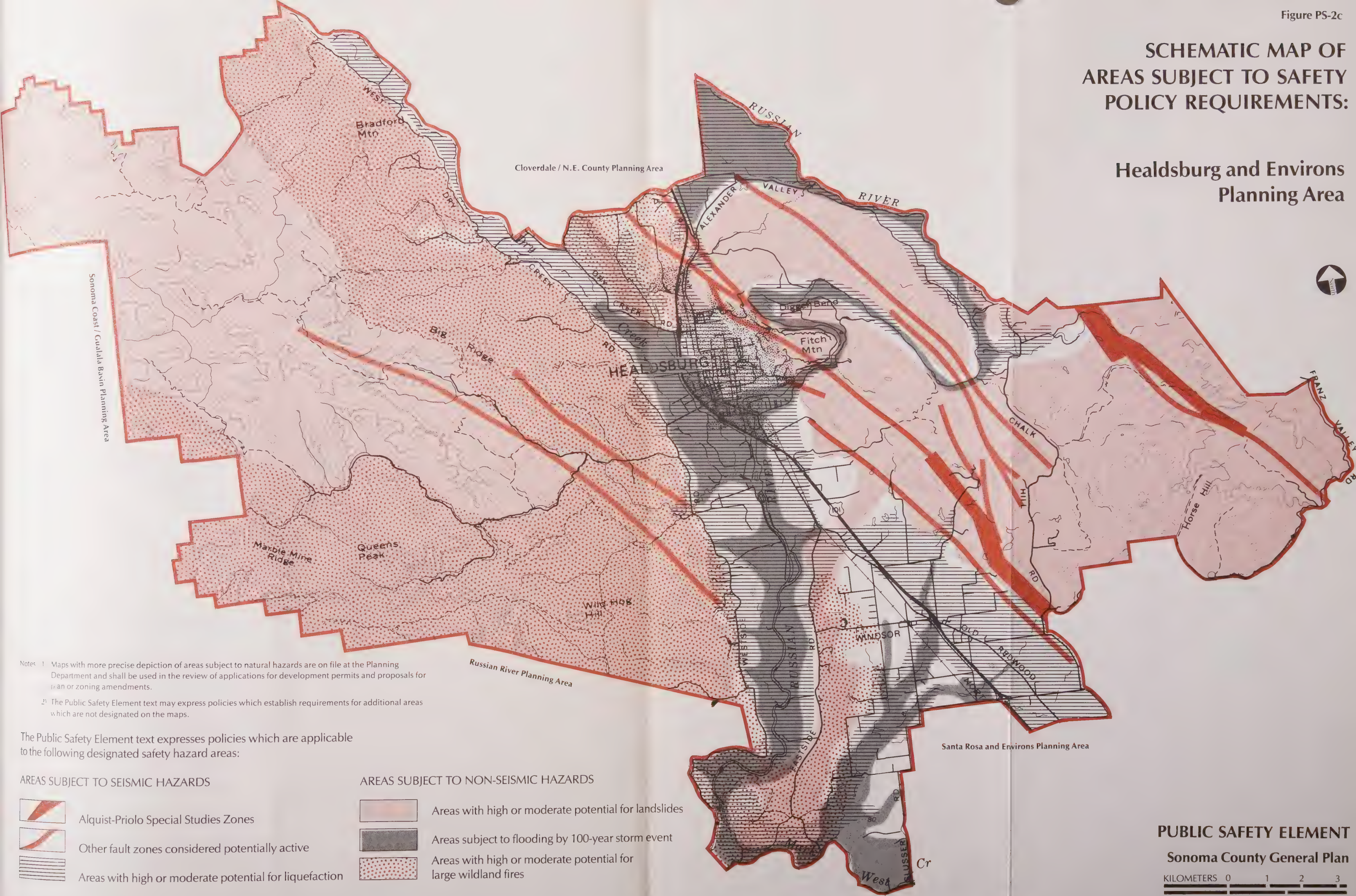
PUBLIC SAFETY ELEMENT

Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:

Healdsburg and Environs Planning Area



Notes: 1. Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.
2. The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.

The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

Russian River Planning Area



The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

-
- Alquist-Priolo Special Studies Zones
- Other fault zones considered potentially active
- Areas with high or moderate potential for liquefaction

AREAS SUBJECT TO NON-SEISMIC HAZARDS

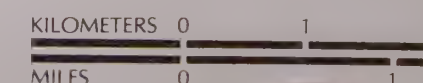
- Areas with high or moderate potential for landslides
- Areas subject to flooding by 100-year storm event
- Areas with high or moderate potential for large wildland fires

Notes: 1) Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.

2) The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.

PUBLIC SAFETY ELEMENT

Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:

Santa Rosa and Environs Planning Area






Sebastopol and Environs Planning Area




These depiction of areas subject to natural hazards are on file at the Planning
Department and will be used in the review of applications for development permits and proposals for
amendments
The Public Safety Element text may express policies which establish requirements for additional areas
designated on the maps.

The Public Safety Element text expresses policies which are
applicable to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

-  Alquist-Priolo Special Studies Zones
-  Other fault zones considered potentially active
-  Areas with high or moderate potential for liquefaction

AREAS SUBJECT TO NON-SEISMIC HAZARDS

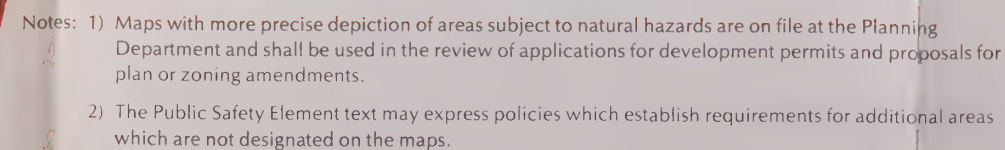
-  Areas with high or moderate potential for landslides
-  Areas subject to flooding by 100-year storm event
-  Areas with high or moderate potential for large wildland fires



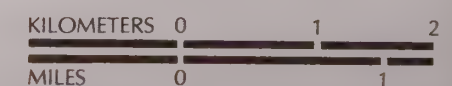
PUBLIC SAFETY ELEMENT

Sonoma County General Plan



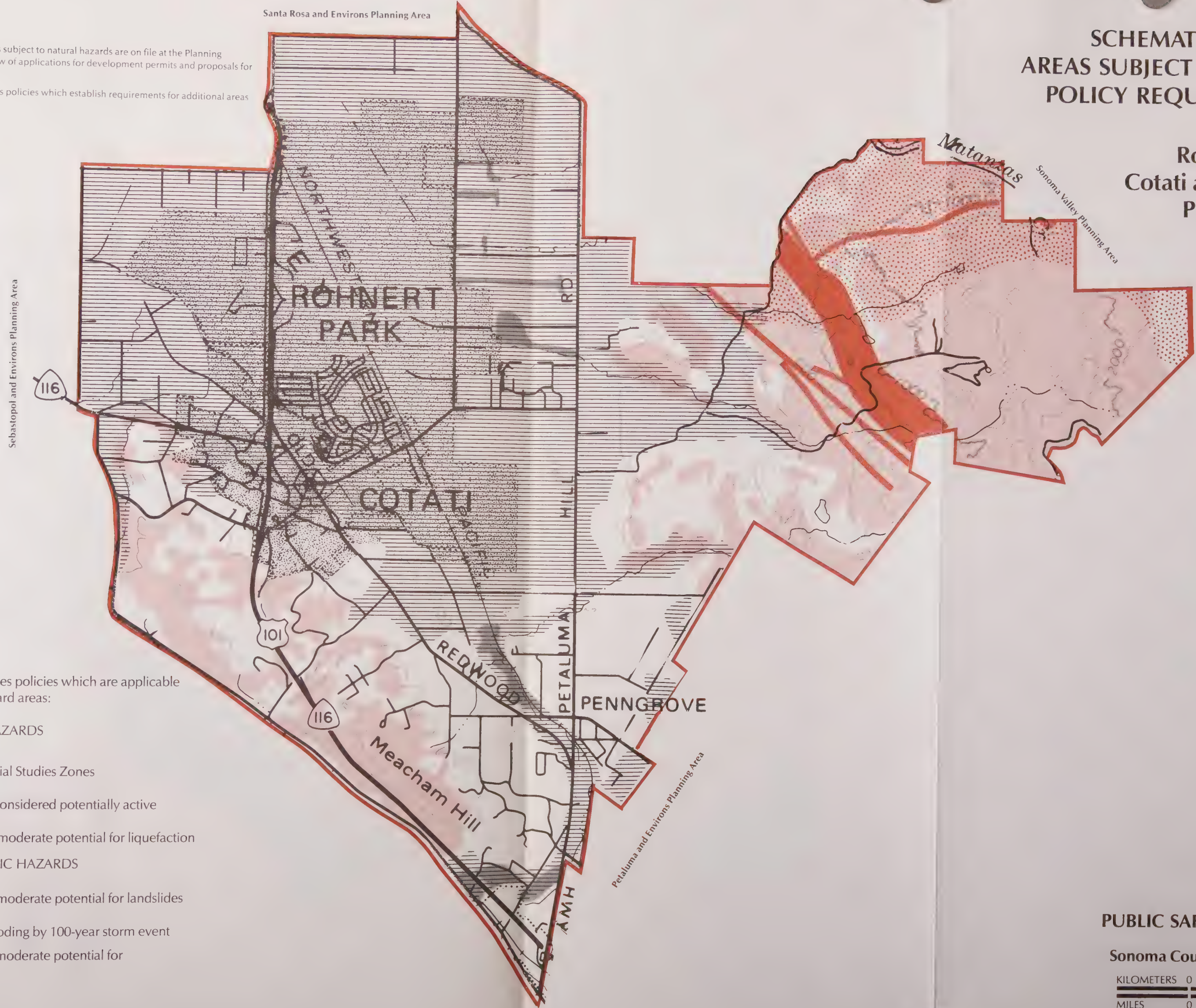


Sonoma County General Plan



SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:


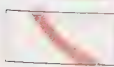

Rohnert Park- Cotati and Environs Planning Area



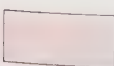
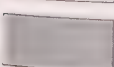

Notes:
1. More precise depiction of areas subject to natural hazards are on file at the Planning
2. and shall be used in the review of applications for development permits and proposals for
3. amendments
4. The Safety Element text may express policies which establish requirements for additional areas
5. designated on the maps.

The Public Safety Element text expresses policies which are applicable
to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

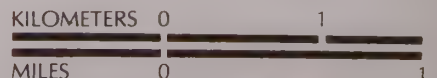
-  Alquist-Priolo Special Studies Zones
-  Other fault zones considered potentially active
-  Areas with high or moderate potential for liquefaction

AREAS SUBJECT TO NON-SEISMIC HAZARDS

-  Areas with high or moderate potential for landslides
-  Areas subject to flooding by 100-year storm event
-  Areas with high or moderate potential for large wildland fires

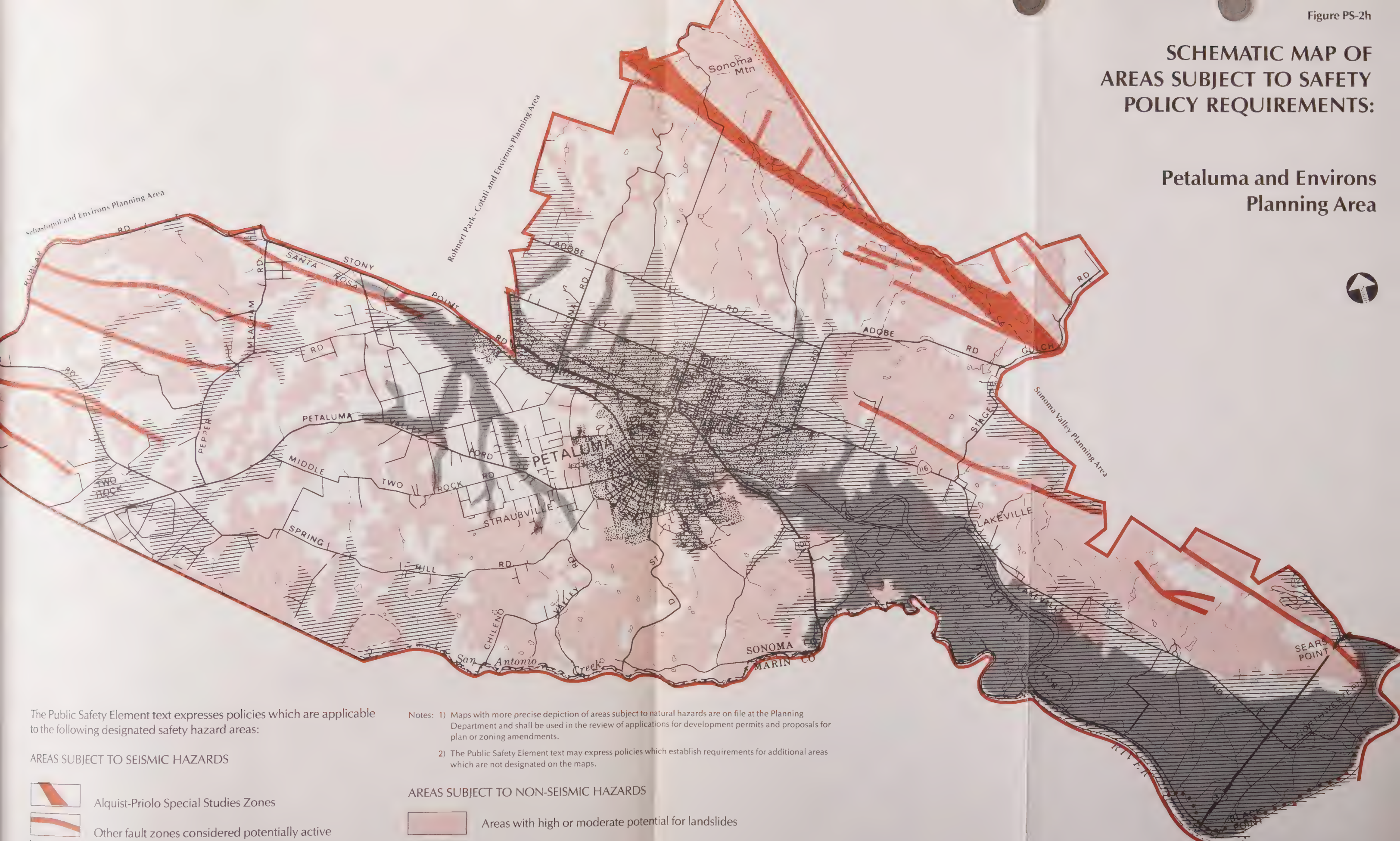
PUBLIC SAFETY ELEMENT

Sonoma County General Plan






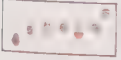
SCHEMATIC MAP OF AREAS SUBJECT TO SAFETY POLICY REQUIREMENTS:

Petaluma and Environs Planning Area



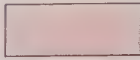


The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

AREAS SUBJECT TO SEISMIC HAZARDS

-  Alquist-Priolo Special Studies Zones
-  Other fault zones considered potentially active
-  Areas with high or moderate potential for liquefaction
-  Areas subject to potential inundation by Tsunamis

- Notes: 1) Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.
- 2) The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.

AREAS SUBJECT TO NON-SEISMIC HAZARDS

-  Areas with high or moderate potential for landslides
-  Areas subject to flooding by 100-year storm event
-  Areas with high or moderate potential for large wildland fires

PUBLIC SAFETY ELEMENT

Sonoma County General Plan



SCHEMATIC MAP OF
AREAS SUBJECT TO SAFETY
POLICY REQUIREMENTS:

Sonoma Valley Planning Area



The Public Safety Element text expresses policies which are applicable to the following designated safety hazard areas:

- AREAS SUBJECT TO SEISMIC HAZARDS
- Alquist-Priolo Special Studies Zones
 - Other fault zones considered potentially active
 - Areas with high or moderate potential for liquefaction
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- Areas with high or moderate potential for landslides
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Notes: 1) Maps with more precise depiction of areas subject to natural hazards are on file at the Planning Department and shall be used in the review of applications for development permits and proposals for plan or zoning amendments.
2) The Public Safety Element text may express policies which establish requirements for additional areas which are not designated on the maps.

PUBLIC SAFETY ELEMENT
Sonoma County General Plan

KILOMETERS 0 1 2 3
MILES 0 1



PUBLIC HEARING DRAFT
10-15-86

Base Map Revised December 1985

Figure LU-6b

Land Use Plan Map Cloverdale/N.E. County

Sonoma
County
General Plan

LEGEND

URBAN RESIDENTIAL CATEGORIES
 Low Density (1)
 Medium Density (1)
 High Density (1)

RR RURAL RESIDENTIAL (2)

(1) Numbers on map indicate maximum density in units/acre
 (2) Numbers on map indicate maximum density in units/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

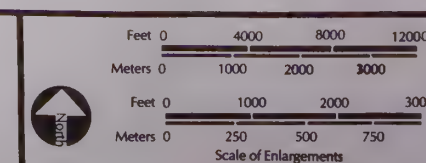
General Commercial
 Limited Commercial
 Recreation/Visitor-Serving Comm.
 Resource-Related Commercial/Industrial
 General Industrial
 Limited Industrial
 Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

VS Vineyards and Specialty Crops (2)
 GF Grazing, Forage Crops and Livestock (2)
 DA Diverse Agriculture (2)
 TL Timberlands (2)
 GM Geothermal and Mineral Resources (2)
 NR Natural Resource Conservation (2)

Proposed Existing

▲ Parks
 ○ Schools
 ○ Wastewater Mgt. Facilities
 ○ Solid Waste Disposal Facilities
 --- Land Use Change
 --- Change in Density
 --- Urban Service



Sonoma County Planning Department

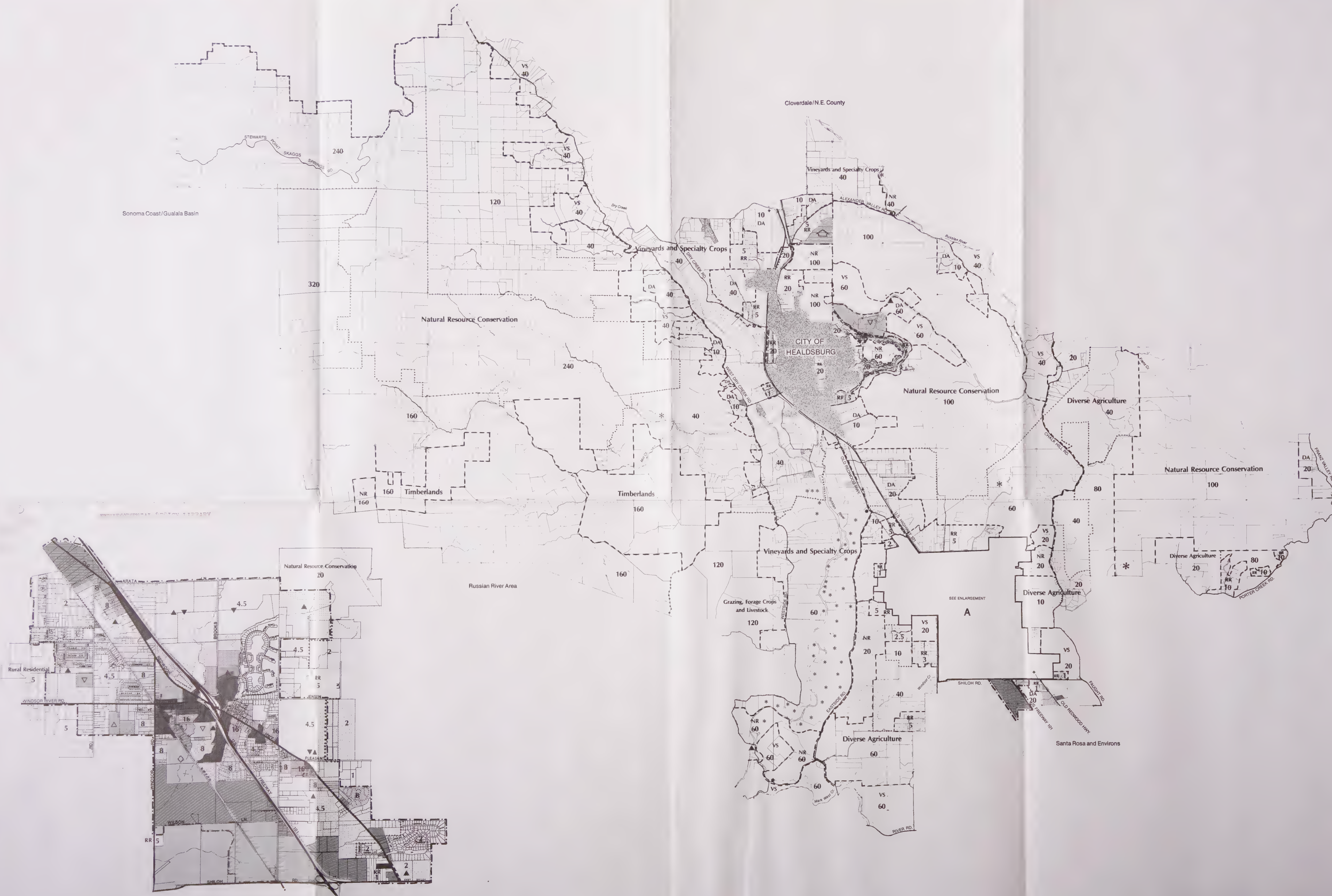
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Date: Resolution: Date: Resolution:

2

Sonoma Coast/Gualala Basin

Cloverdale/N.E. County



ENLARGEMENT A
WINDSOR

PUBLIC HEARING DRAFT
10-15-86

Base Map Revised December 1985

Figure LU-6c

Land Use Plan Map Healdsburg and Environs

LEGEND

URBAN RESIDENTIAL CATEGORIES
Low Density (1)
Medium Density (1)
High Density (1)

RR RURAL RESIDENTIAL (2)
(1) Numbers on map indicate maximum density in units/acre
(2) Numbers on map indicate maximum density in acres/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

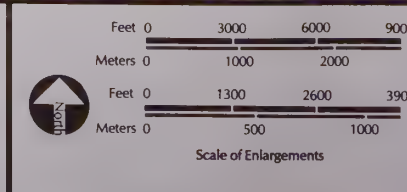
General Commercial
Limited Commercial
Recreation/Visitor-Serving Comm.
Resource-Related Commercial/Industrial
General Industrial
Limited Industrial
Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

VS Vineyards and Specialty Crops (2)
GF Grazing, Forage Crops and Livestock (2)
DA Diverse Agriculture (2)
RR Rural Residential (2)
TL Timberlands (2)
GM Geothermal and Mineral Resources (2)
NR Natural Resource Conservation (2)

Proposed Existing

Parks
Schools
Wastewater Mgt. Facilities
Solid Waste Disposal Facilities
Land Use Change
Change in Density
Urban Service



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Base Map Revised December 1985

Figure LU-6d
Land Use Plan Map
Russian River

LEGEND

- URBAN RESIDENTIAL CATEGORIES**
- Low Density (1)
 - Medium Density (1)
 - High Density (1)
 - RR RURAL RESIDENTIAL (2)

(1) Numbers on map indicate maximum density in units/acre
(2) Numbers on map indicate maximum density in acres/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

- General Commercial
- Limited Commercial
- Recreation/Visitor-Serving Comm.
- Resource-Related Commercial/Industrial
- General Industrial
- Limited Industrial
- Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

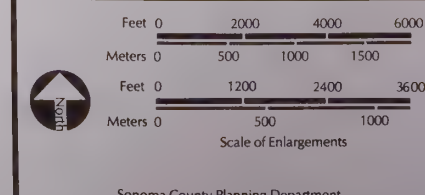
- VS Vineyards and Specialty Crops (2)
- GF Grazing, Forage Crops and Livestock (2)
- DA Diverse Agriculture (2)
- TL Timberlands (2)
- GM Geothermal and Mineral Resources (2)
- NR Natural Resource Conservation (2)

RESOURCE CATEGORIES

- TL Timberlands (2)
- GM Geothermal and Mineral Resources (2)
- NR Natural Resource Conservation (2)

Proposed Existing

- Parks
- Schools
- Wastewater Mgt. Facilities
- Solid Waste Disposal Facilities
- Land Use Change
- Change in Density
- Urban Service

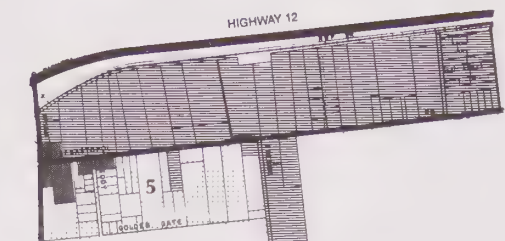
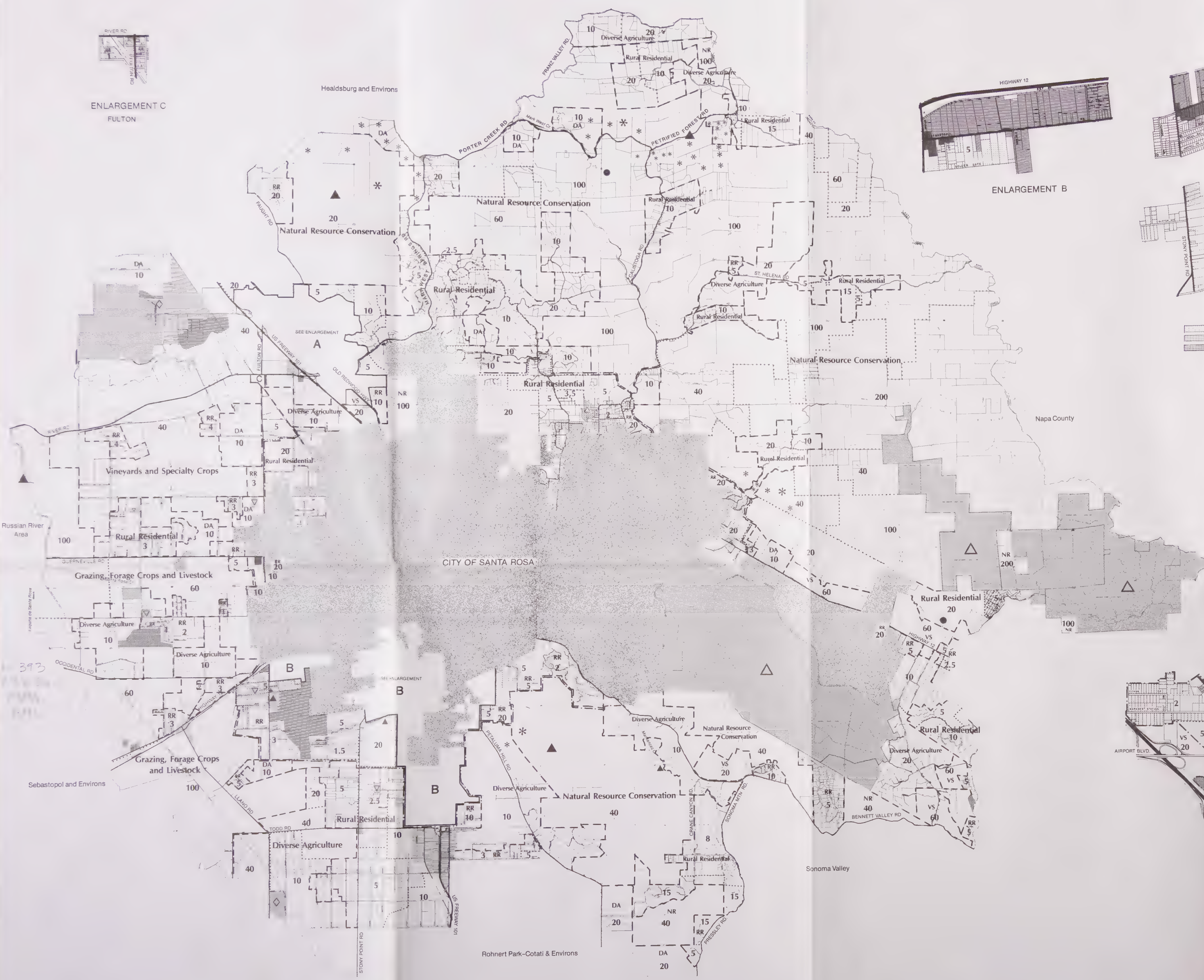


PUBLIC HEARING DRAFT
10-15-86

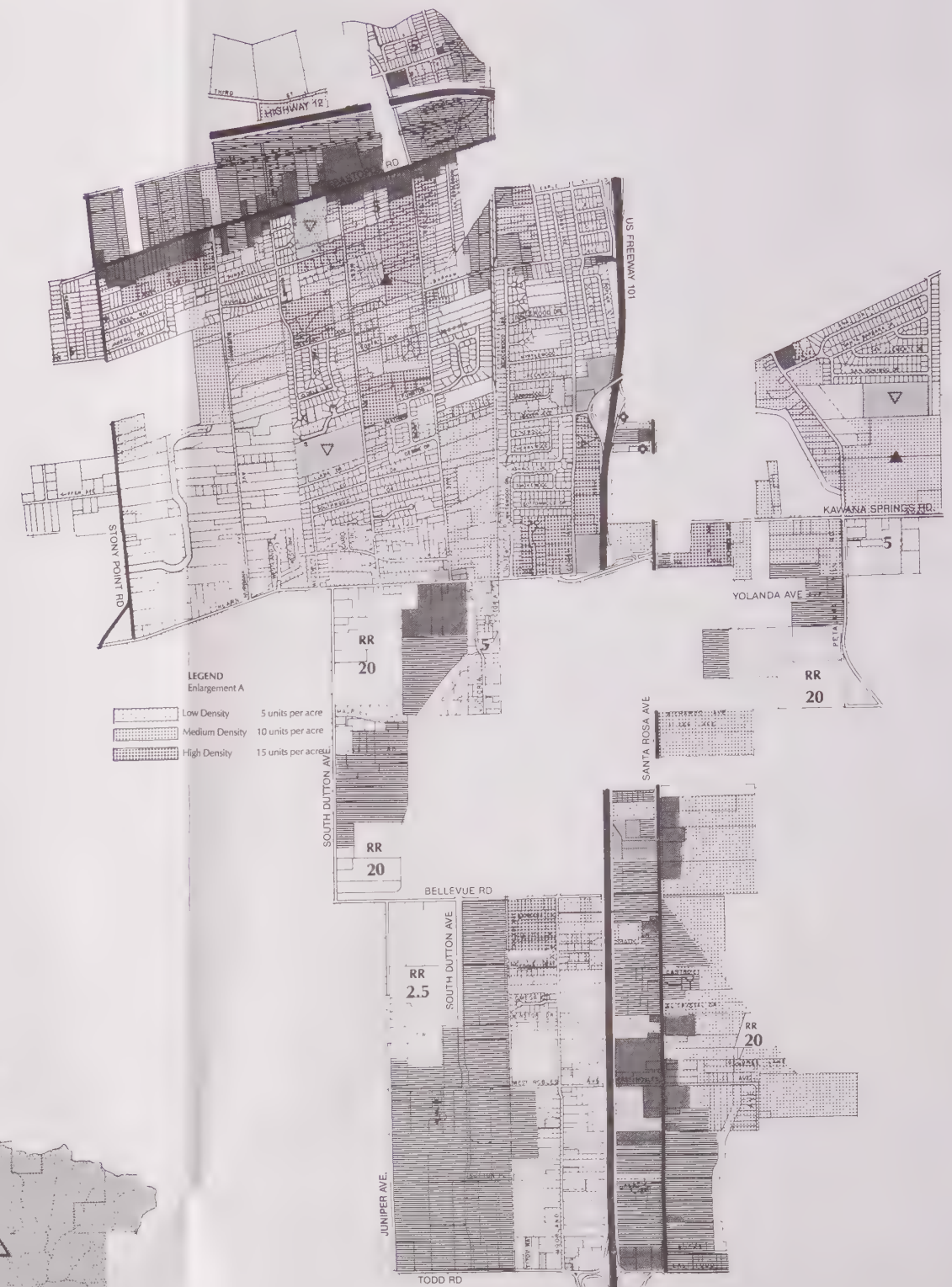
Adopted by Board of Supervisors	
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Amended by Board of Supervisors	
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ENLARGEMENT C
FULTON

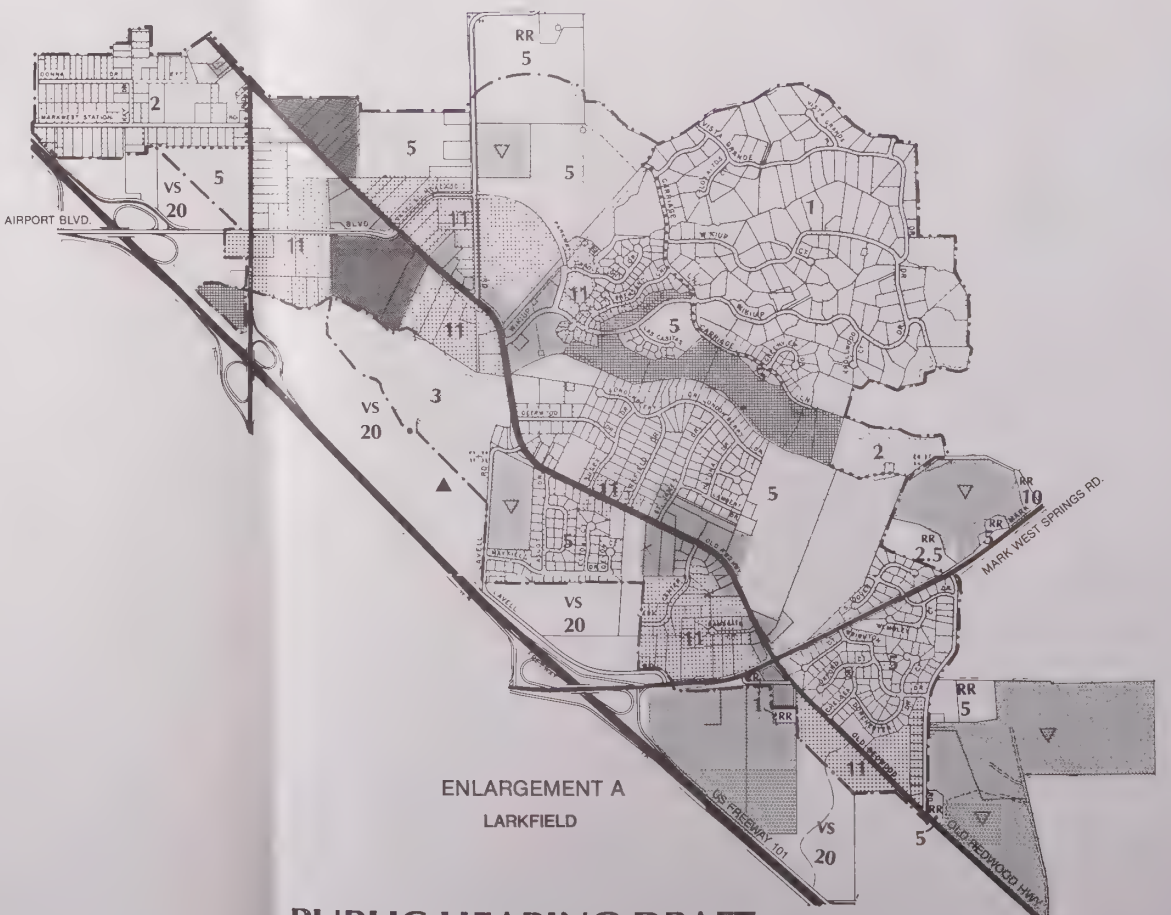


ENLARGEMENT B



ENLARGEMENT A

ENLARGEMENT B
SOUTH SANTA ROSA

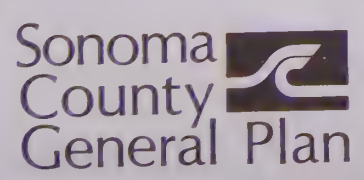


ENLARGEMENT A
LARKFIELD

PUBLIC HEARING DRAFT
10-15-86

Base Map Revised December 1985

Figure LU-6e
Land Use Plan Map
Santa Rosa and Environs



LEGEND

- URBAN RESIDENTIAL CATEGORIES
- Low Density (1)
 - Medium Density (1)
 - High Density (1)

- RR RURAL RESIDENTIAL (2)

(1) Numbers on map indicate maximum density in units/acre
(2) Numbers on map indicate maximum density in units/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

- General Commercial
- Limited Commercial
- Recreation/Visitor-Serving Comm.
- Resource-Related Commercial/Industrial
- General Industrial
- Limited Industrial
- Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

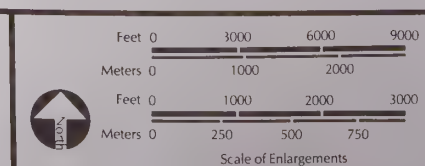
- Vineyards and Specialty Crops (2)
- Grazing, Forage Crops and Livestock (2)
- Diverse Agriculture (2)

RESOURCE CATEGORIES

- Timberlands (2)
- Geothermal and Mineral Resources (2)
- Natural Resource Conservation (2)

Proposed Existing

- Parks
- Schools
- Wastewater Mgt. Facilities
- Solid Waste Disposal Facilities
- Land Use Change
- Change in Density
- Urban Service



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Date:	Resolution:	Date:	Resolution:
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Date:	Resolution:	Date:	Resolution:



ENLARGEMENT B
SEBASTOPOL AREA

Rohnert Park-Cotati & Environs

ENLARGEMENT A
GRATON

PUBLIC HEARING DRAFT
10-15-86

Base Map Revised December 1985

Figure LU-6f

Land Use Plan Map Sebastopol and Environs

LEGEND

URBAN RESIDENTIAL CATEGORIES

- Low Density (1)
- Medium Density (1)
- High Density (1)

RR RURAL RESIDENTIAL (2)

(1) Numbers on map indicate maximum density in units/acre
(2) Numbers on map indicate maximum density in acres/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

- General Commercial
- Limited Commercial
- Recreation/Visitor-Serving Comm.
- Resource-Related Commercial/Industrial
- General Industrial
- Limited Industrial
- Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

- Vineyards and Specialty Crops (2)
- Grazing, Forage Crops and Livestock (2)
- Diverse Agriculture (2)

RESOURCE CATEGORIES

- Timberlands (2)
- Geothermal and Mineral Resources (2)
- Natural Resource Conservation (2)

Proposed Existing

- Parks
- Schools
- Wastewater Mgt. Facilities
- Solid Waste Disposal Facilities

BOUNDARIES

- Land Use Change
- Change in Density
- Urban Service

Feet 0 2000 4000 6000

Meters 0 500 1000 1500

Feet 0 1000 2000 3000

Meters 0 250 500 750

Scale of Enlargements

Sonoma County Planning Department

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ENLARGEMENT A
PENNGROVE

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Base Map Revised December 1985

Figure LU-6g

Land Use Plan Map **Rohnert Park - Cotati and Environs**

Sonoma County General Plan

LEGEND

URBAN RESIDENTIAL CATEGORIES

- Low Density (1)
- Medium Density (1)
- High Density (1)
- RURAL RESIDENTIAL (2)

(1) Numbers on map indicate maximum density in units/acre
(2) Numbers on map indicate maximum density in units/lot

COMMERCIAL AND INDUSTRIAL CATEGORIES

- General Commercial
- Limited Commercial
- Recreation/Visitor-Serving Comm.
- Resource-Related Commercial/Industrial
- General Industrial
- Limited Industrial
- Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

- Vineyards and Specialty Crops (2)
- Grazing, Forage Crops and Livestock (2)
- Diverse Agriculture (2)

RESOURCE CATEGORIES

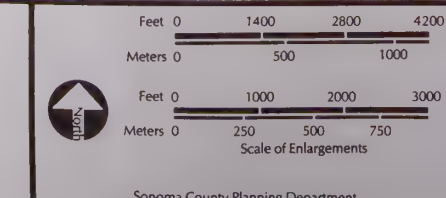
- Timberlands (2)
- Geothermal and Mineral Resources (2)
- Natural Resource Conservation (2)

Proposed Existing

- Parks
- Schools
- Wastewater Mgt. Facilities
- Solid Waste Disposal Facilities

BOUNDARIES

- Land Use Change
- Change in Density
- Urban Service



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Date:	Resolution:



Base Map Revised December 1985

PUBLIC HEARING DRAFT
10-15-86

Figure LU-6h

Land Use Plan Map **Petaluma and Environs**

LEGEND

URBAN RESIDENTIAL CATEGORIES
 [Symbol] Low Density (1)
 [Symbol] Medium Density (1)
 [Symbol] High Density (1)
 [Symbol] RR RURAL RESIDENTIAL (2)
 (1) Numbers on map indicate maximum density in units/acre
 (2) Numbers on map indicate maximum density in acres/unit

COMMERCIAL AND INDUSTRIAL CATEGORIES

[Symbol] General Commercial
 [Symbol] Limited Commercial
 [Symbol] Recreation/Visitor-Serving Comm.
 [Symbol] Resource-Related Commercial/Industrial
 [Symbol] General Industrial
 [Symbol] Limited Industrial
 [Symbol] Public/Quasi-Public (see symbols below)

AGRICULTURAL CATEGORIES

[Symbol] VS Vineyards and Specialty Crops (2)
 [Symbol] GF Grazing, Forage Crops and Livestock (2)
 [Symbol] DA Diverse Agriculture (2)
RESOURCE CATEGORIES
 [Symbol] TL Timberlands (2)
 [Symbol] GM Geothermal and Mineral Resources (2)
 [Symbol] NR Natural Resource Conservation (2)

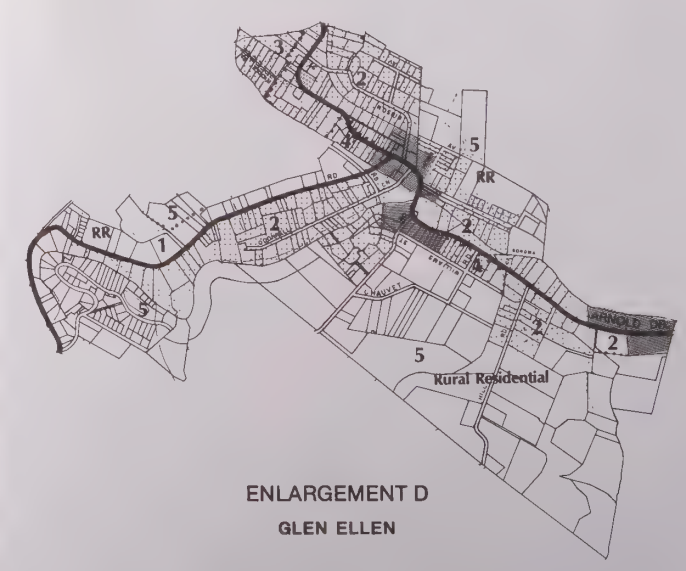
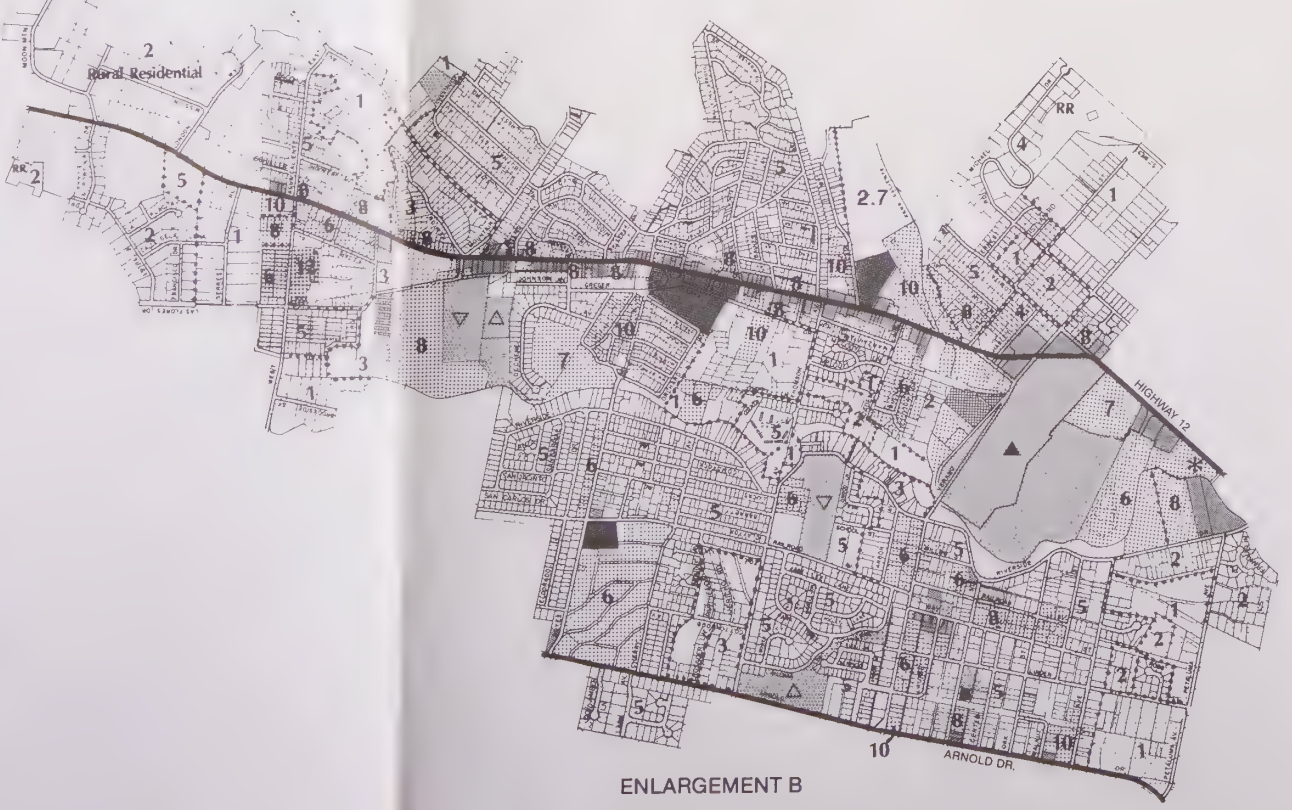
Proposed Existing
 [Symbol] Parks
 [Symbol] Schools
 [Symbol] Wastewater Mgt. Facilities
 [Symbol] Solid Waste Disposal Facilities
BOUNDARIES
 [Symbol] Land Use Change
 [Symbol] Change in Density
 [Symbol] Urban Service

Feet 0 3000 6000 9000
 Meters 0 1000 2000



Sonoma County Planning Department

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1	2	3
	MOFFITT 5th Floor	
4	5	6

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